ORDER NO. AD9105113C8

Service Manual

Compact Disc Player

SL-PS900

COMPACT DIGITAL MASH multi-stage noise shaping

V10916

Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	
(EG)	F.R. Germany & Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	
(PX)	Far East PX.	

SL-PS700 MECHANISM SERIES (RAE0201)

SPECIFICATIONS

■ Audio

No. of channels	2 (left and right, stereo)
Frequency response	2–20,000 Hz, ±0.3 dB
Output voltage	2.3 V (at 0 dB)
Dynamic range	99 dB
S/N ratio	118 dB
Total harmonic distortion	0.0022% (1 kHz, 0 dB)
Channel separation	112 dB
Wow and flutter	Below measurable limit
DA converter	MASH • 1 bit
Output impedance	Approx. 1 kΩ
Load impedance	More than 10 kΩ
Headphone output level	15 mW max. 32Ω (adjustable)

■ Pickup

Wavelength	780 nm

■ General

Power consumption	18 W
Power supply	
For (E, EB, EG, GN) areas:	AC 50/60 Hz, 230 V–240 V
For (GC, PX) areas:	AC 50/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W×H×D)	430×130×333 mm
Weight	6.2 kg

Note:

Specifications are subject to change without notice.
Weight and dimensions are approximate.

※
- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
- MASH is a trademark of NTT.

Technics

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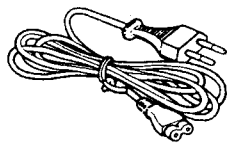
■ BEFORE USE

Be sure to disconnect the mains cord before adjusting the voltage selector.
Use a minus (−) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.

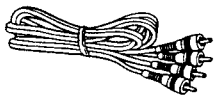
(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)
Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

■ ACCESSORIES

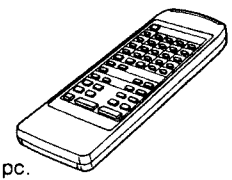
- AC power supply cord ..... 1 pc.
  [(SFDAC05E03): (E, EG)
  (SJA193): (EB)
  (RJA0004): (GC, PX)
  (SJA173): (GN)]



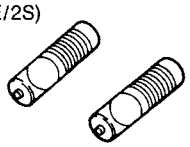
- Stereo connection cable ..... 1 pc.
  (SJP2249-4)



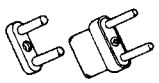
- Remote control transmitter ..... 1 pc.
  (RAK-SL512W)



- Batteries ..... 2 pcs.
  (UM-4NE/2S)



- Power plug adaptor ..... 1 pc.
  (SJP9215): (GC, PX)



Note: The configuration of the AC power supply cord differs according to area.

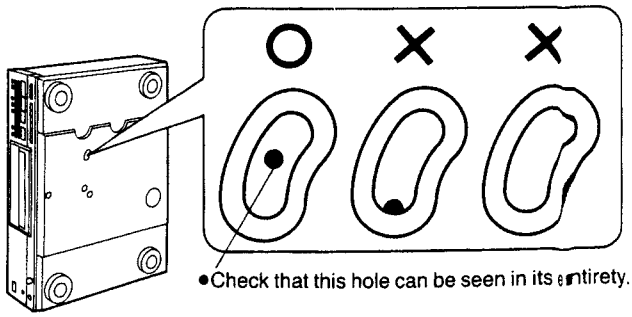
■ BEFORE TRANSPORTING THE UNIT

To safeguard against damage in transit, be sure to secure the optical pickup by following the procedure below.

1 **Remove the compact disc inside, and set the power switch to OFF with the disc holder still open.**

2 **Slowly push in the disk holder by hand.**
- Do not tilt the unit while doing this.
- If the disc holder is not pushed in slowly, the optical pick-up may not be secured properly.

3 **Check that the optical pick-up is secured. (Refer to the figure on the right.)**



- Check that this hole can be seen in its entirety.

■PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780nm
Maximum output radiation power from pick up: 100μW/VDE

Laser radiation from the pick up lens is safety level, but be sure the followings:

1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge: 780nm
Maximale strahlungsleistung der lasereinheit: 100μW/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

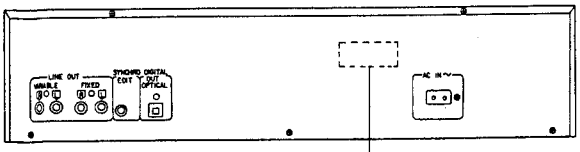
1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werksseitig justierten einstellregler der lasereinrelt nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

ADVARSEL: I dette a apparat anvendes laser.

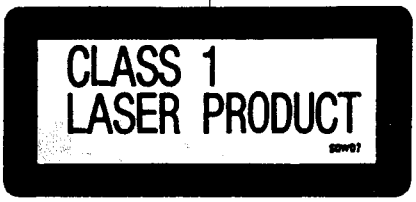
• Use of caution labels

Note: ○ Mark is used, × Mark is not used.

Areas	SQWD7	RQLS0021	RQLS0051
(E)	○	○	○
(EB), (EG), (GC), (GN)	○	○	×
(PX)	×	×	×



SQWD7

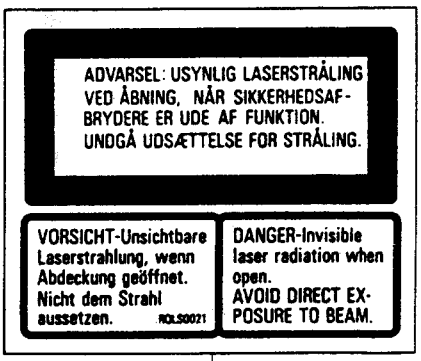


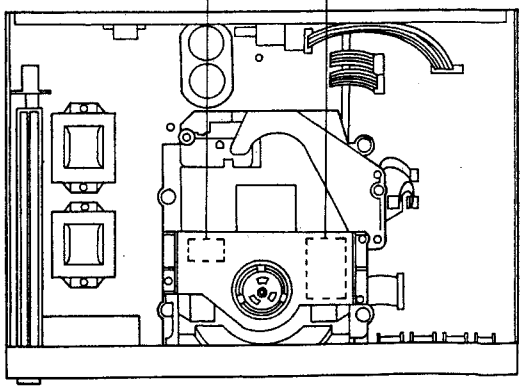
Obs:
Apparaten innehåller laser
Komponent av höger laserklass
än klass 1.

RQLS0051

VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING! Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
RQLS0051

RQLS0021


ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT-Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet. Nicht dem Strahl aussetzen.
RQLS0021
DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.



■ PLACEMENT

■ **This unit is a precision instrument. Be sure to place it on a flat surface.**

■ **Avoid places such as the following:**

- Near any equipment or device that generates strong magnetism.
- On any heat-generating equipment or device, or in any place where the temperature is high (35°C or higher).
- Extremely cold places (5°C or below).
- Near a tuner or TV (It may cause noise in the broadcast, or disturbance of the TV picture.)

■ **When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.**
Always remove the disc before storing the unit for any period of time.

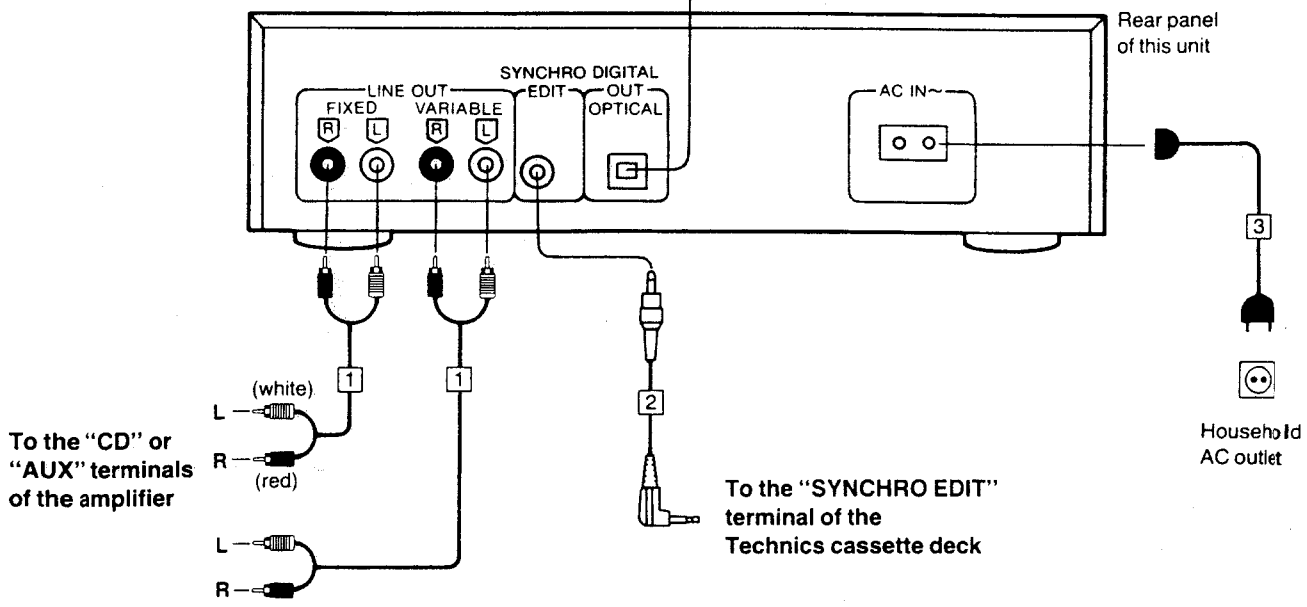
■ **To avoid problems due to vibration.**

- Do not place a book or similar object under this unit.
- Do not route the connection cables (of this or other units) across the operation panel, across the top, or under the unit.

■ CONNECTIONS

Turn power off on all components before making connections.

•Optical output terminal (DIGITAL OUT/OPTICAL)
This terminal can be used for connection with other equipment that has a digital input terminal, such as an amplifier, by using an optical cable (optional). A dust-protection cap is inserted in this terminal. Remove this cap only when a connection is to be made to this terminal.



1 Stereo connection cable (included)

- When this cable is connected to "FIXED", the CD player output will remain fixed.
- When it is connected to "VARIABLE", the output level can be adjusted using the remote control transmitter.

Note:
Be sure to connect the stereo connection cable with the amplifier when using the synchro edit function even if the optical cable has been connected.

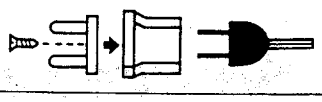
2 L-type cable (not included)

When this cable is connected to a Technics cassette deck with a synchro edit connector, the deck's synchro recording function will be activated during CD edit recording.

3 AC power supply cord (included)

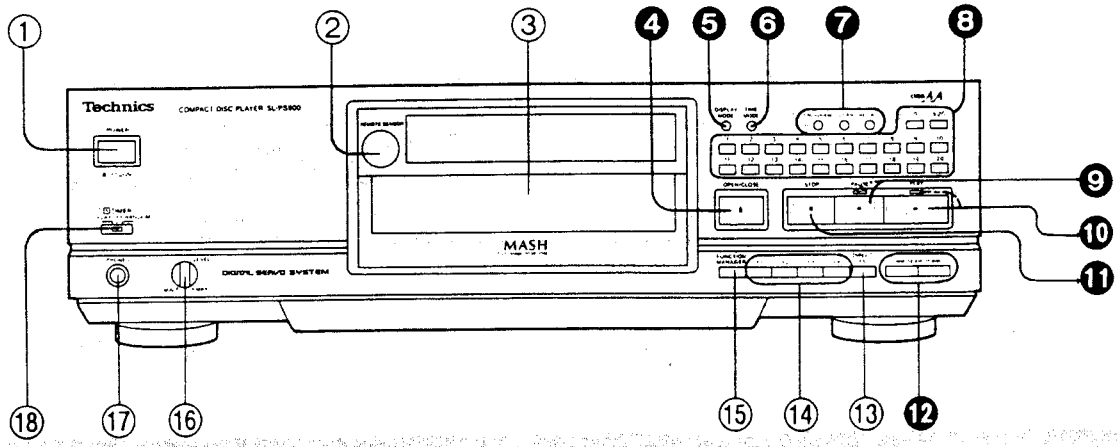
Note:
The configuration of the AC outlet and AC power supply cord differs according to area.

For areas except continental Europe
If the power plug will not fit your socket, use the power plug adaptor (included).



■ LOCATION OF CONTROLS

The functions indicated by the white numbers (with black background, ❹ etc.) can also be activated using the remote control transmitter.



Control section

① **Power switch (POWER, ▙ OFF ▂ ON)**

② **Remote control signal sensor (REMOTE SENSOR)**

③ **Disc holder**

❹ **Disc holder open/close button (▲ OPEN/CLOSE)**

❺ **Display mode button (DISPLAY MODE)**
Pressing this button enables the unit to delete the indicators on the display in two steps.

❻ **Time mode select button (TIME MODE)**

❼ **Buttons for program function**
•Program button (PROGRAM)
Pressing this button initiates the program play mode. You can then enter specific tracks using the numeric buttons.
•Clear button (CLEAR)
Each pressing this button makes one track cleared from the programmed sequence.
•Recall button (RECALL)
This button can be used to display the contents of the programmed track sequence for confirmation.

❽ **•Numeric buttons (0~20)**
•Input mode button (>20)
Press this button and then the numeric buttons (0~9) to specify the track number 21 and up.

❾ **Pause button and indicator (❚❚ PAUSE)**

❿ **Play button and indicator (▶ PLAY)**

⓫ **Stop button (■ STOP)**
This button can be used to stop disc play, as well as to cancel the various play modes.

⓬ **Search buttons (◀◀ SEARCH ▶▶)**
These buttons are used for fast forward and backward searching during play. In the function manager mode, they are used to indicate the desired function on the display.

⓭ **Direct button (DIRECT, F5)**
In the function manager mode, this is used to operate the functions which have not been set in the F1 to F4 buttons.

⓮ **Function buttons (F1~F4)**
In the function manager mode, desired functions can be selected and stored in these buttons.

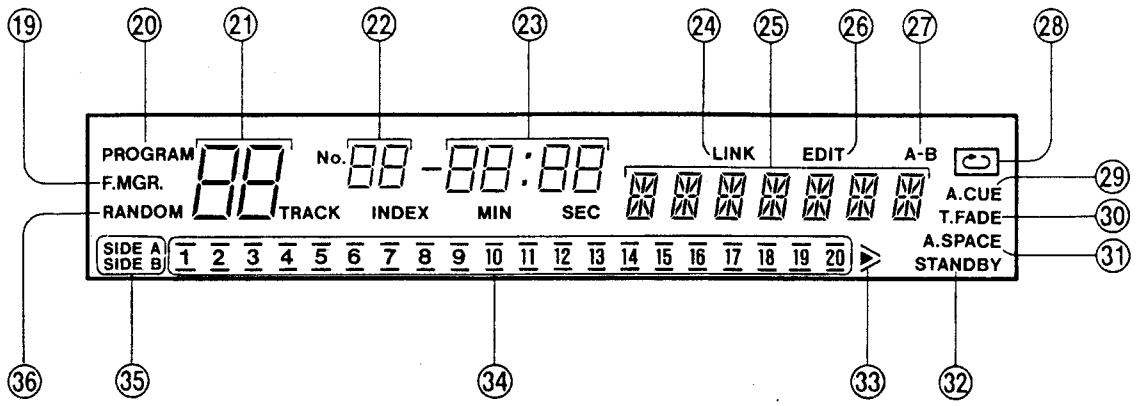
⓯ **Function manager button (FUNCTION MANAGER)**

⓰ **Headphones volume control (LEVEL)**

> Avoid listening to music at high volume levels for extended periods of time.

⓱ **Headphones jack (PHONES)**

⓲ **Timer switch (TIMER)**



Indicators section

⑲ **Function manager indicator (F.MGR.)**
This lights in the function manager mode.

⑳ **Program indicator (PROGRAM)**

㉑ **Track number display (TRACK)**

㉒ **Index/program number display (No., INDEX)**

㉓ **Time display (MIN, SEC)**

㉔ **Link indicator (LINK)**

㉕ **Character display**

㉖ **Compact disc edit indicator (EDIT)**

㉗ **A–B repeat indicator (A–B)**

㉘ **Repeat play indicator ( )**

㉙ **Auto cue indicator (A. CUE)**

㉚ **Time fade indicator (T.FADE)**

㉛ **Auto space indicator (A.SPACE)**
This lights when an unrecorded blank lasting about 4 seconds is inserted between tracks during CD edit recording.

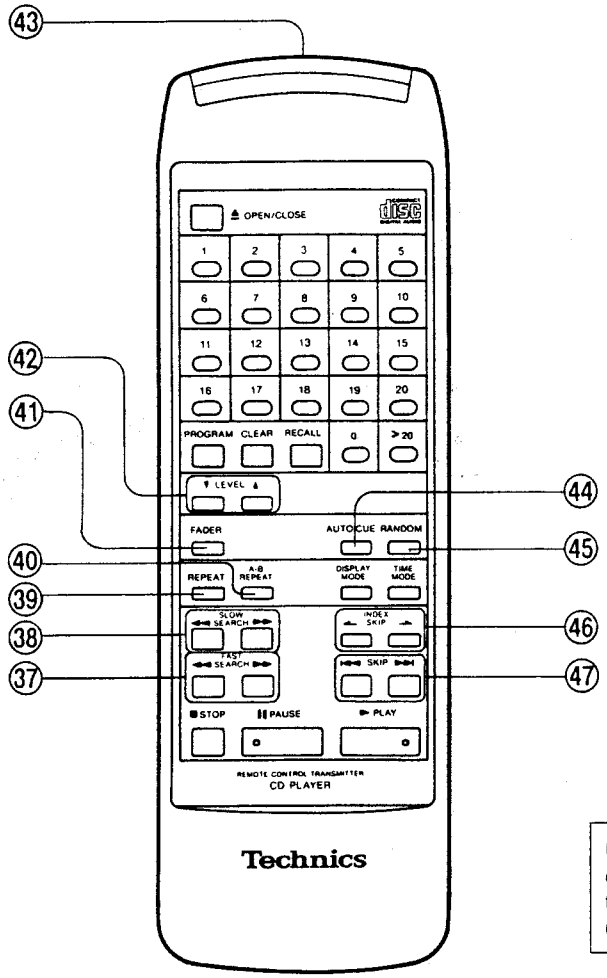
㉜ **Standby indicator (STANDBY)**
This indicator lights when the display mode button is pressed twice in the stop mode.

㉝ **"Over" mark ( )**
This indicator lights if the total number of tracks on the disc is 21 or more.

㉞ **Track number indicator (1–20)**

㉟ **Tape side indicator (SIDE A, SIDE B)**

㊱ **Random play indicator (RANDOM)**



Unnumbered buttons on the remote control transmitter function identically to their corresponding parts on the unit.

Remote control transmitter

㊲ Fast search buttons (◀◀ FAST SEARCH ▶▶)
These buttons can be used to move forward or backward on the disc during play at high speed.

㊳ Slow search buttons (◀◀ SLOW SEARCH ▶▶)
These buttons can be used to move forward or backward on the disc during play at slow speed.

㊴ Repeat button (REPEAT)
Pressing this button enables all the tracks or programmed tracks to be played repeatedly.

㊵ A–B repeat button (A–B REPEAT)
Pressing this button enables the programs in the selected range to be played repeatedly.

㊶ Fader button (FADER)
Pressing this button in the pause mode initiates the fade in. Pressing this button during play initiates the fade out.

㊷ Level buttons (▼ LEVEL ▲)
These buttons can be used to control output level.

㊸ Remote control signal transmission window

㊹ Auto cue button (AUTO CUE)
Pressing this button enables the unit to stop at the beginning of every track and switch to the play standby mode.

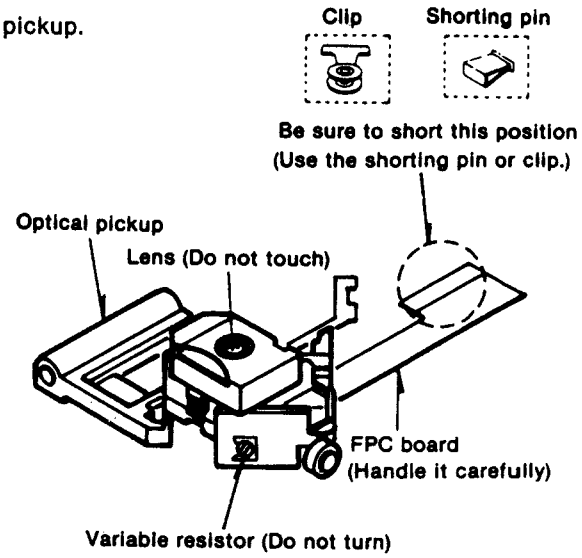
㊺ Random button (RANDOM)
This button can be used to play the tracks on a disc in a random sequence.

㊻ Index skip buttons (— INDEX SKIP —)
These buttons are used to skip by index number (sub divisions within the current track).

㊼ Skip buttons (|◀◀ SKIP ▶▶|)
These buttons are used to skip by track in the forward or reverse direction.

■ HANDLING PRECAUTIONS FOR OPTICAL PICKUP

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the optical pickup.



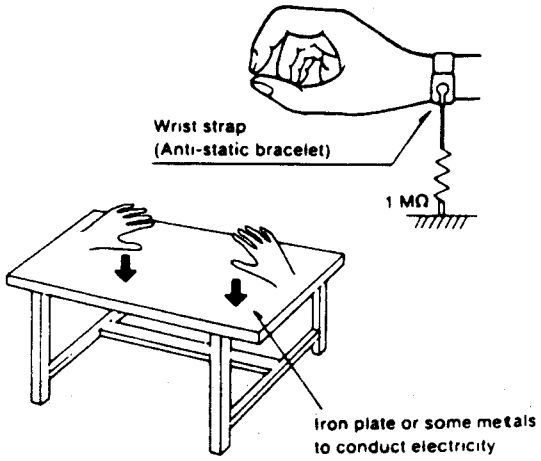
- **Handling of optical pickup**

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).
   When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

- **Grounding for electrostatic breakdown prevention**

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the optical pickup.

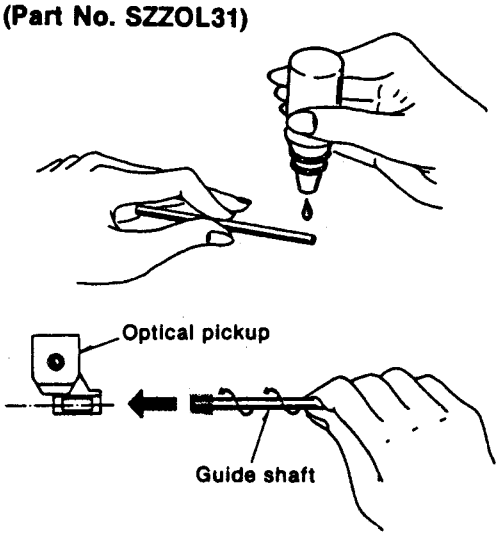


■ INSTRUCTIONS FOR TRAVERSE OIL (Part No. SZZOL31)

The container contains 6g (approx. 3ml) of oil.
One application (one shaft) uses 0.05ml of oil.

How to Use

(1) Remove the guide shaft in the traverse deck from the optical pickup and clean off any dust from the guide shaft.
(2) Apply one drop of the SZZOL31 to the tip of the guide shaft.
(3) Hold the guide shaft so that its oiled end touches the optical pickup and insert it into the bearing while rotating it slowly.
(4) After securing the guide shaft, move the optical pickup by hand several times to the left and right to distribute the oil on the guide shaft.



■ DISASSEMBLY INSTRUCTIONS

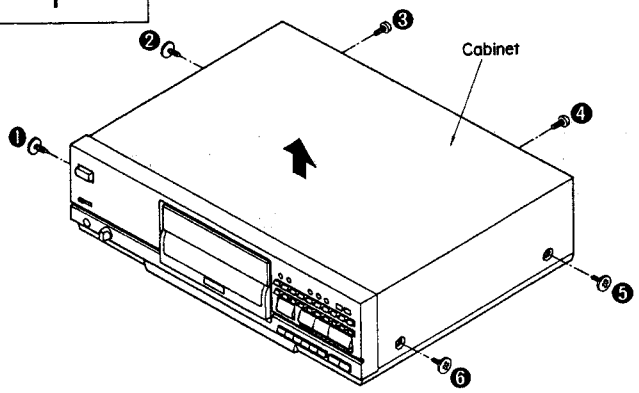
Warning: This product uses a laser diode. Refer to caution statements on page 3.

ACHTUNG: • Die lasereinheit nicht zerlegen.
• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

*** This CD player is equipped with FPC board so handle them with care during disassembly and reassembly.**

Ref. No. 1 — **Removal of the cabinet**

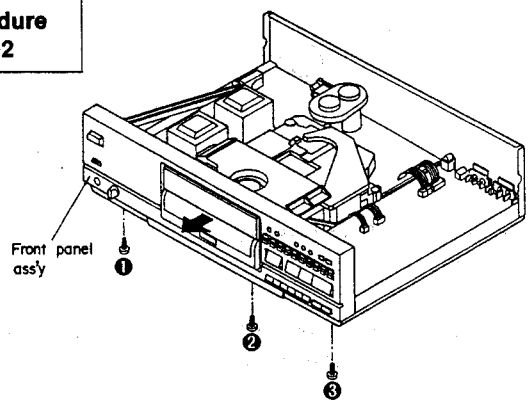
Procedure 1



• Remove the 6 screws (❶~❻).

Ref. No. 2 — **Removal of the front panel ass'y**

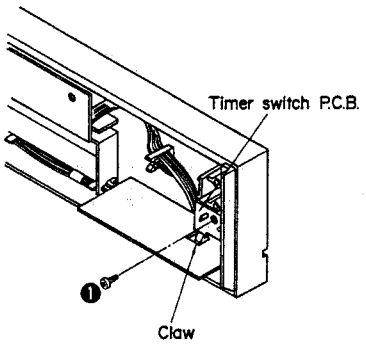
Procedure 1→2



1. Remove the 3 screws (❶~❸).
2. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3 — **Removal of the timer switch P.C.B.**

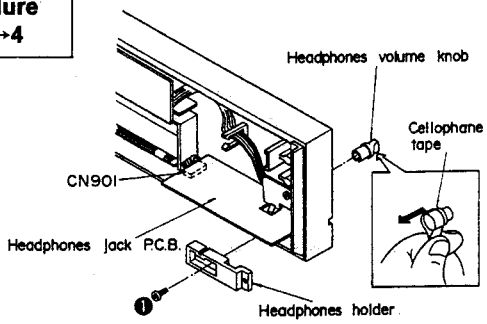
Procedure 1→2→3



1. Remove the 1 screw (❶).
2. Release the 1 claw.

Ref. No. 4 — **Removal of the headphones jack P.C.B.**

Procedure 1→2→4

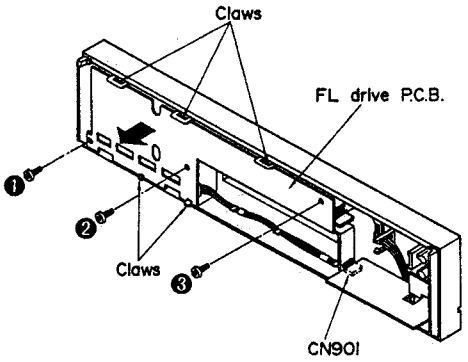


1. Remove the 1 connector (CN901).
2. Remove the headphones volume knob.
3. Remove the 1 screw (❶).
4. Remove the headphones holder.

Ref. No. 5 — **Removal of the FL drive P.C.B.**

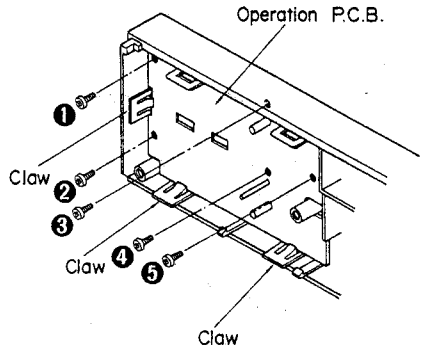
Procedure 1→2→5

1. Remove the 1 connector (CN901).
2. Remove the 3 screws (❶~❸).
3. Remove the 5 claws.
4. Remove the FL drive P.C.B. in the direction of arrow.



Ref. No. 6	Removal of the operation P.C.B.

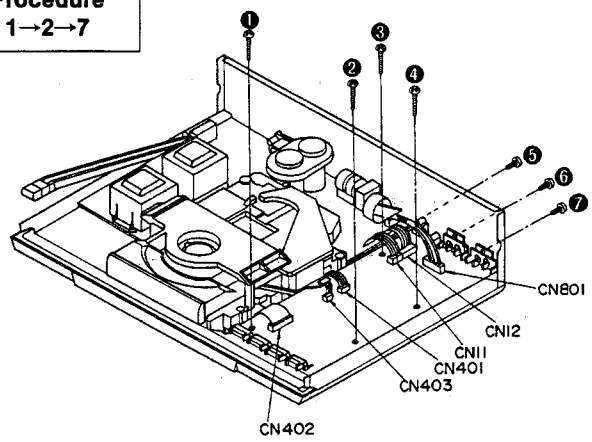
Procedure 1→2→5→6



1. Remove the 5 screws (❶~❺).
2. Release the 3 claws.

Ref. No. 7	Removal of the main P.C.B.

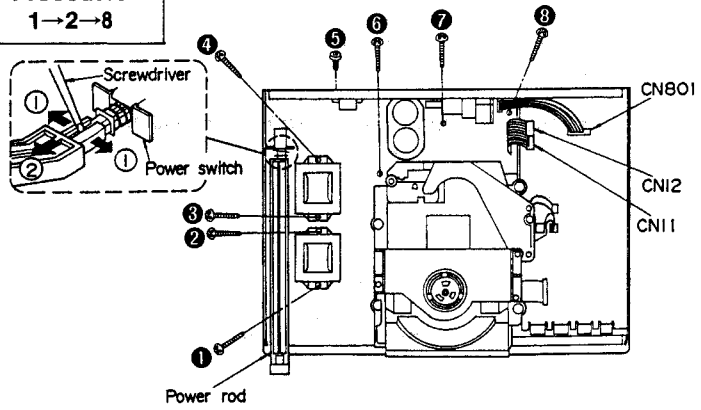
Procedure 1→2→7



1. Remove the 1 connector (CN801).
2. Remove the 5 flat cables (CN11, CN12, CN401, CN402, CN403).
3. Remove the 7 screws (❶~❼).

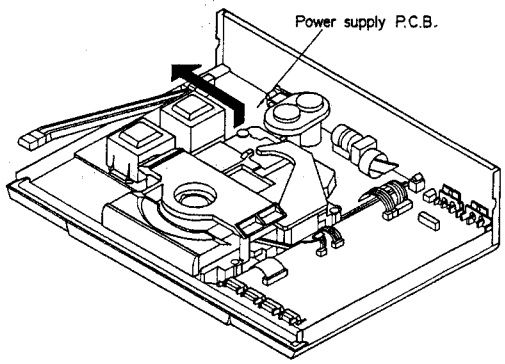
Ref. No. 8	Removal of the power rod and power supply P.C.B.

Procedure 1→2→8



■ **Removal of the power rod.**

1. Set the power switch to the "OFF" position.
2. Remove the power rod by using a screwdriver.

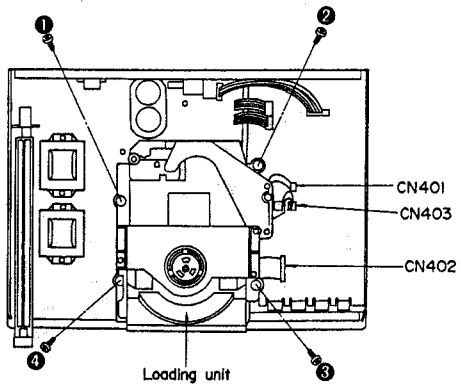


■ **Removal of the power supply P.C.B.**

1. Remove the 8 screws (❶~❽).
2. Remove the 1 connector (CN801).
3. Remove the 2 flat cables (CN11, CN12).
4. Remove the power supply P.C.B. in the direction of arrow.

Ref. No. 9	Removal of the loading unit

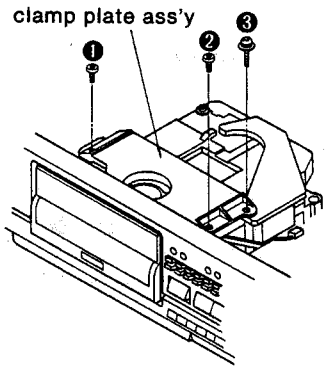
Procedure 1→2→9



1. Remove the 3 flat cables (CN401, CN402, CN403).
2. Remove the 4 screws (❶~❹).

Ref. No. 10	Removal of the clamp plate ass'y

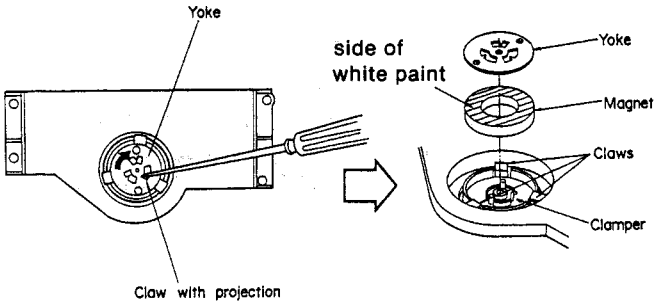
Procedure 1→10



• Remove the 3 screws (❶~❸).

Ref. No. 11	Removal of the yoke, magnet and clamper

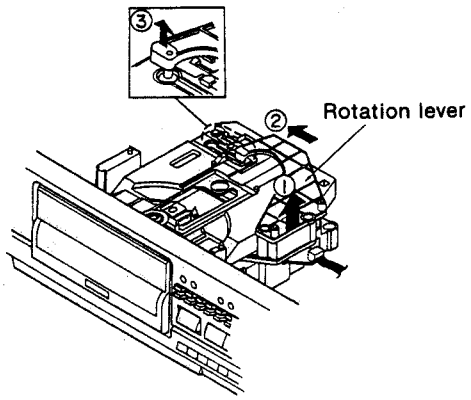
Procedure
1→10→11



1. While lifting the claw with a screwdriver, rotate yoke in the direction of arrow and remove the yoke and magnet.
2. Release the 3 claws of the clamper.

Ref. No. 12	Removal of the rotation lever

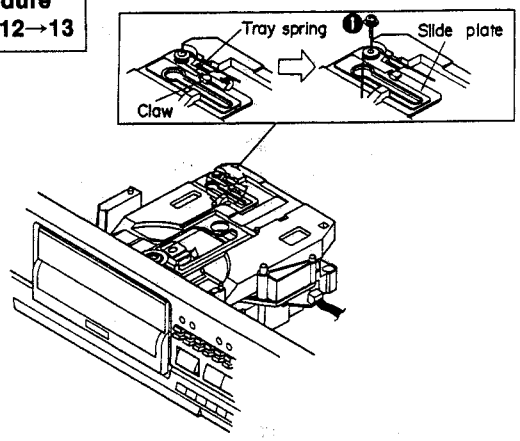
Procedure
1→10→12



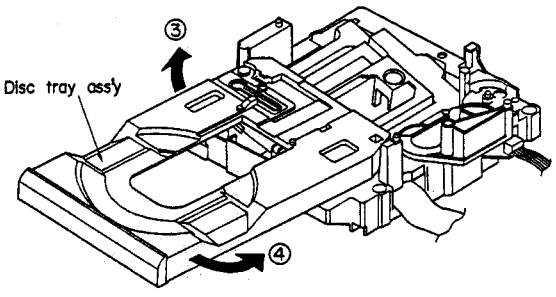
• Remove the rotation lever in the directions of ①, ②, ③.

Ref. No. 13	Removal of the tray spring and slide plate

Procedure
1→10→12→13



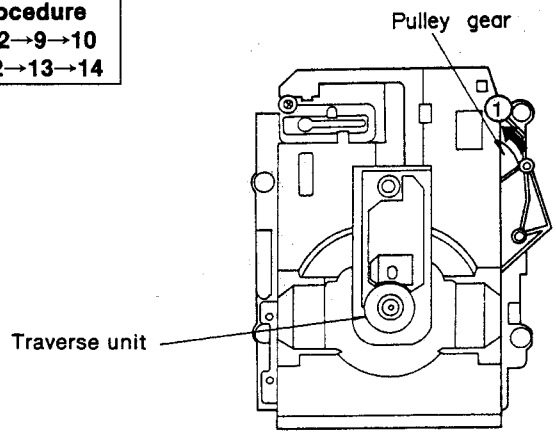
1. Remove the tray spring from claw.
2. Remove the 1 screw (❶).
3. Remove the tray spring and slide plate.



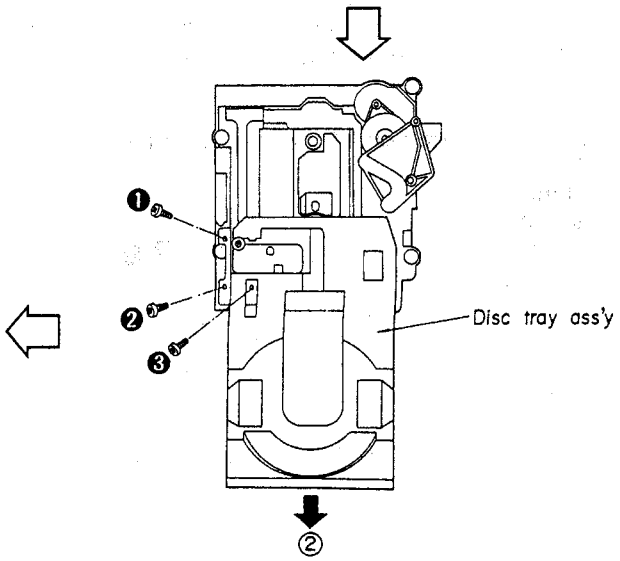
4. Remove the disc tray ass'y in the direction of arrow ③, ④.

Ref. No. 14	Removal of the disc tray ass'y

Procedure
1→2→9→10
→12→13→14



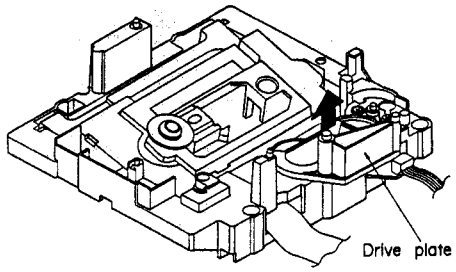
1. Turn the pulley gear in the direction of arrow ① until the traverse unit comes down.



2. Pull the disc tray ass'y in the direction of arrow ②.
3. Remove the 3 screws (❶~❸).

Ref. No. 15	Removal of the drive plate

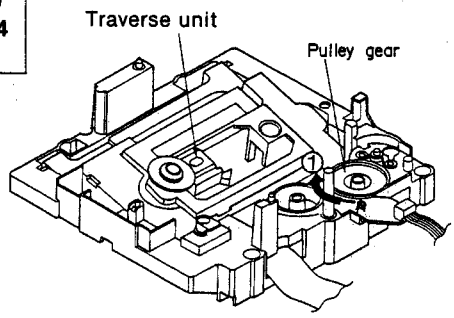
Procedure
1→2→9→10
→12→13→14
→15



• Remove the drive plate in the direction of arrow.

Ref. No. 16	Removal of the traverse unit

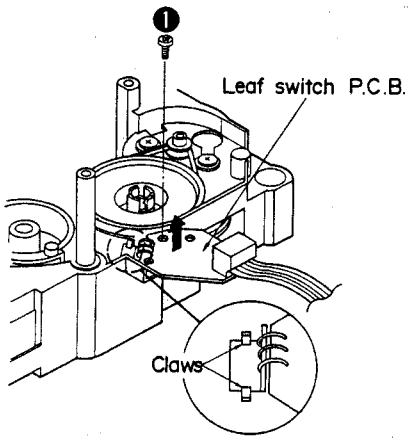
Procedure
1→2→9→10
→12→13→14
→15→16



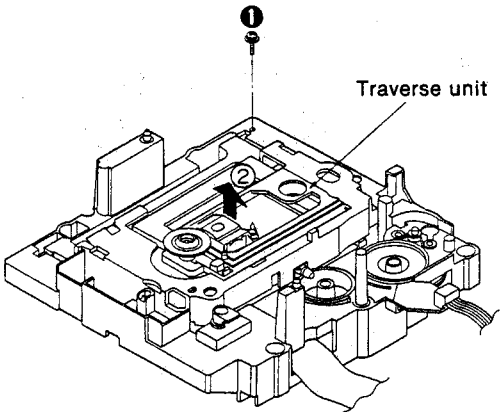
1. Rotate the pulley gear in the direction of arrow ① until the traverse unit comes up.

Ref. No. 17	Removal of the leaf switch P.C.B.

Procedure
1→2→9→10
→12→13→14
→15→17



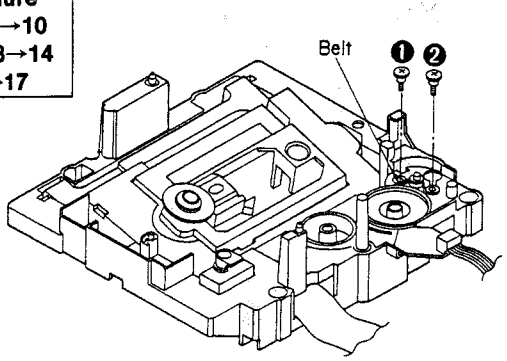
1. Remove the 1 screw (❶).
2. Release the 2 claws and then remove the leaf switch P.C.B. in the direction of arrow.



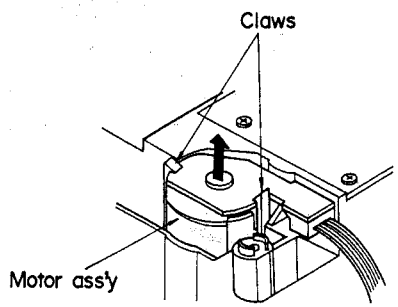
2. Remove the 1 screw (❶).
3. Remove the traverse unit in the direction of arrow ②.

Ref. No. 18	Removal of the motor ass'y

Procedure
1→2→9→10
→12→13→14
→15→17



1. Remove the belt.
2. Remove the 2 screws (❶, ❷).

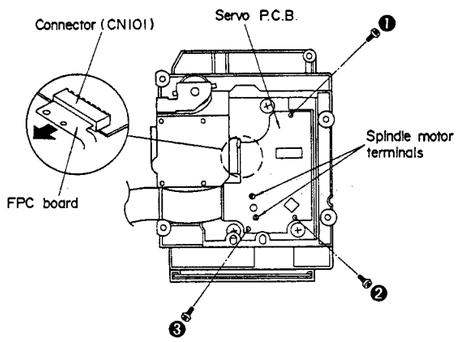


3. Release the 2 claws and then remove the motor ass'y.

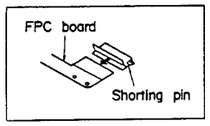
Ref. No. 19 — Removal of the optical pickup

Procedure
1→2→9→10
→12→13→14
→15→16→19

1. Remove the 3 screws (❶~❸).
2. Unsolder the 2 terminals of spindle motor.
3. Remove the FPC board from the optical pickup.

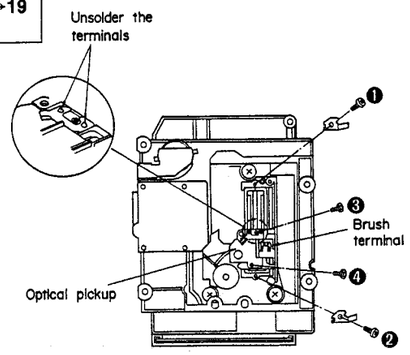


Caution: To prevent the breakdown of the laser diode, antistatic shorting pin is inserted into the FPC board.



Ref. No. 20 — Removal of the optical pickup

Procedure
1→2→9→10
→12→13→14
→15→16→19
→20



1. Remove the 2 screws (❶, ❷).
2. Unsolder the 2 terminals and the 2 screws (❸, ❹).

Caution: Take care not to touch the brush terminal.

Refer to the handling precautions for optical pickup and instructions for traverse oil (See page 8).

Ref. No. 21 — Removal of the spindle motor

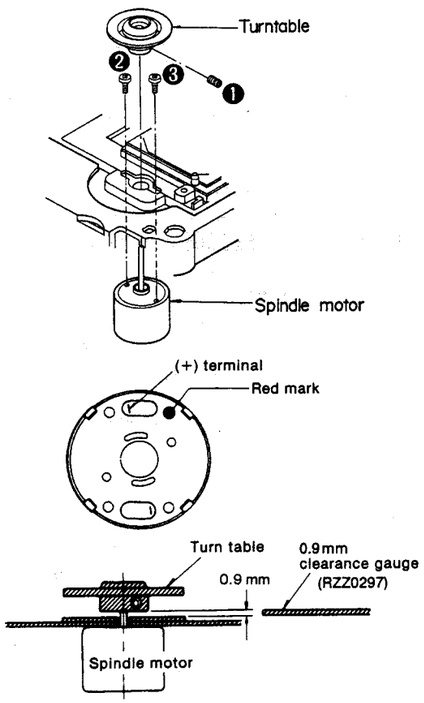
Procedure
1→2→9→10
→12→13→14
→15→16→19
→21

1. Loosen the screw (❶) by using a 1.27mm allen wrench and remove the turntable.
2. Remove the 2 screws (❷, ❸).

Caution:
1. Turntable height adjustment is necessary any time the turntable or spindle motor is replaced.
2. The (+) terminal of the spindle motor is indicated by the red mark.

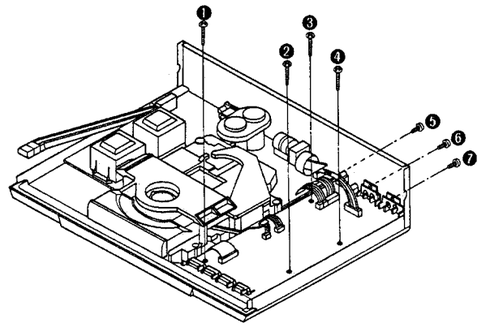
Adjustment of turntable height
1. Insert a 0.9mm clearance gauge (RZZ0297) between the turntable and loading base as shown in the figure.
2. Tighten the turntable set-screw by using a 1.27mm allen wrench.

Caution:
Refer to turntable height adjustment (See page 16).



Ref. No. 22 — How to check the main P.C.B.

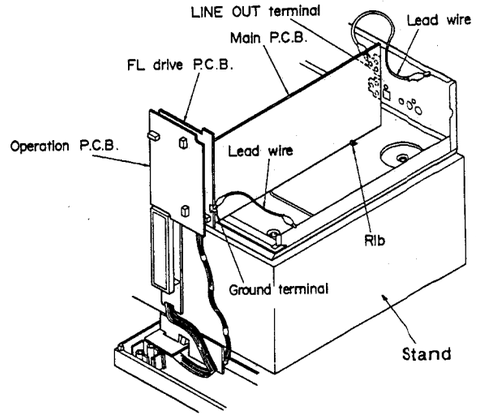
Procedure
1→2→5→6→22



1. Remove the 7 screws (❶~❼).

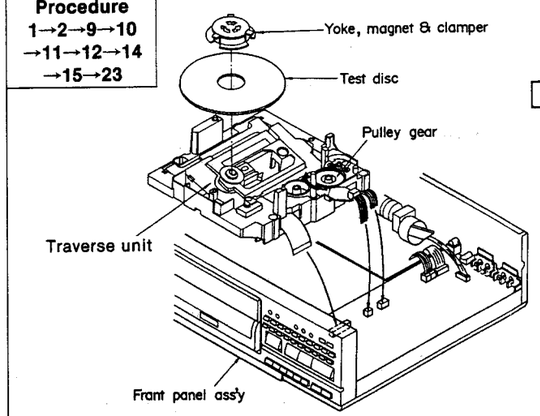
- When checking the soldered surface of the main P.C.B. and replacing the parts, do as shown below.

Cautions:
1. Connect the main P.C.B. ground terminal (LINE OUT terminal) to the chassis with a lead wire.
2. Connect the operation P.C.B. ground terminal to the chassis with a lead wire.

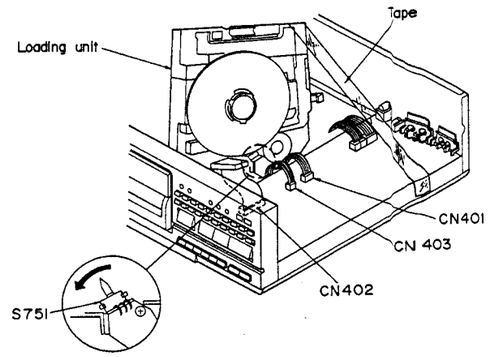


Ref. No. 23 — How to check the servo P.C.B.

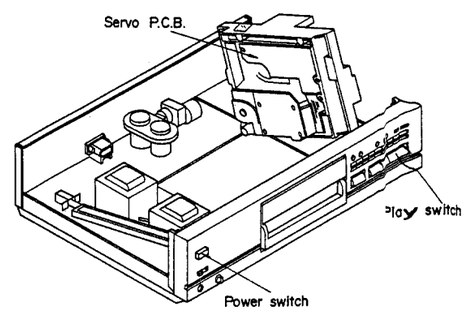
Procedure
1→2→9→10
→11→12→14
→15→23



1. Attach the front panel ass'y to the unit.
2. Rotate the pulley gear in the direction of arrow until the traverse unit comes up.
3. Place the test disc and secure it by using the yoke, magnet and clamper.



4. Connect the 3 flat cables (CN401, CN402, CN403).
5. Fix the loading unit by tape.



6. Power switch to ON.
7. While pushing the open/close det. switch (S751) in the direction of arrow, push the play switch.
8. When checking the soldered surface of servo P.C.B. and replacing the parts, do as shown.

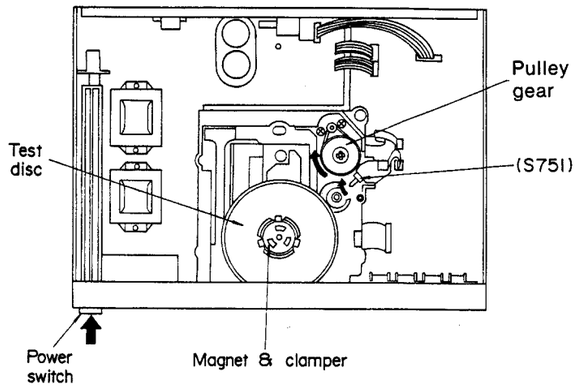
■ MEASUREMENTS AND ADJUSTMENTS

Warning: This product uses a laser diode. Refer to caution statements on page 3.

Caution: During adjustment, never connect CH-2 probe's GND to any place for it may short Vref line. (Connect CH-1 probe's GND to specified TP. described in each section.)

PREPARATION

1. Remove the cabinet and front panel ass'y (See Ref. No. 1, 2 of the disassembly instructions).
2. Remove the clamp plate ass'y, magnet and clamper (see Ref. No. 10, 11 of the same).
3. Remove the rotation lever, disc tray ass'y and drive plate (see Ref. No. 12, 14, 15 of the same).
4. Attach the front panel to the unit.
5. Turn the pulley gear fully in the direction of arrow until traverse unit comes up.
6. Place the test disc and fix it by using the magnet & clamper.
7. Power switch to ON.
8. While pushing the open/close det. switch (S751) in the direction of arrow, push the play switch.



• Adjustment points

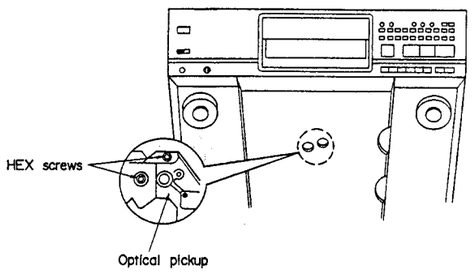


Fig. 1

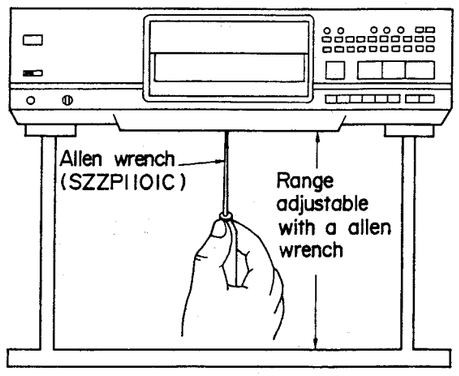


Fig. 2

• SERVO P.C.B.

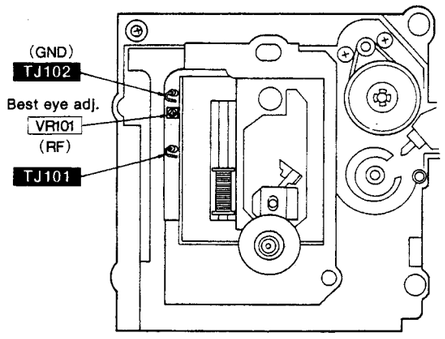


Fig. 3

• Adjustment procedure

Measuring Instruments and Special Tools

* Test discs
1. Playability test disc (SZZP1054C)
2. Uneven test disc (SZZP1056C)

* Normal disc (Ordinary musical program disc)
* Filter (Refer to Fig. 1)
* Dual-beam oscilloscope with bandwith of 30MHz or better (with EXT. trigger and 1: 1 probe).
* Allen wrench (M2.0) (SZZP1101C)
* Allen wrench (M1.27)
* Lock paint (RZZ0L01)
* 0.9mm clearance gauge (RZZ0297)

Adjusting Procedure

* If you have replaced the optical pickup, spindle motor, or turntable, do the following adjustment:

(1) TURNTABLE HEIGHT ADJUSTMENT

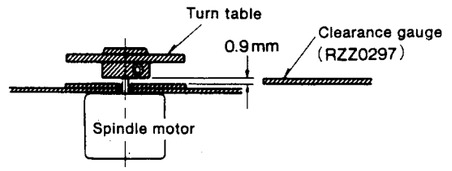
1. Insert the 0.9mm clearance gauge (RZZ0297) between the turntable and the loading base. (Refer to right figure)
2. Tighten the turntable retention screw with the 1.27mm allen wrench.
3. Connect the oscilloscope's CH. 1 probe across TP1 (+) and TP2 (−) terminal via a filter.

Note: For the connection of oscilloscope's CH. 1 probe to servo P.C.B. on foil side. (Refer to Fig. 1)

Oscilloscope setting: VOLT 500mV
SWEEP.....5ms.
Input coupling.....DC

4. Adjust oscilloscope's DC zero balance.
5. Switch the play power **ON**, and play the test disc (SZZP1054C).
6. Measure the voltage amplitude of the signal on the oscilloscope.
7. Adjust the height until the voltage is **0±1.0V**.
   If the voltage exceeds **+1.0V**, lower turntable.
   If the voltage is below **−1.0V**, elevate the turn table.

Note: Mesure the voltage as 0V as possible.



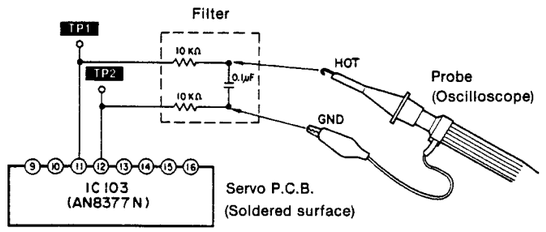


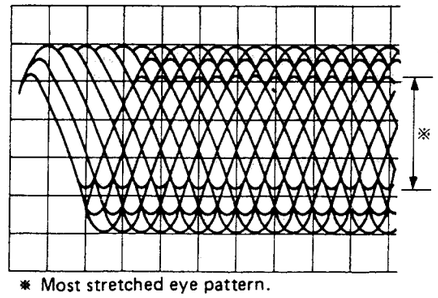
Fig. 1

(2) MECHANICAL ADJUSTMENT

1. Connect the oscilloscope's CH. 1 probe across TJ101 (RF) and TJ102 (GND) on the servo P.C.B. (Refer to Fig. 3 on page 15)

Oscilloscope setting: VOLT 200mV
SWEEP.....0.5μs.
Input coupling.....AC

2. Switch the player power **ON**, and play track 7 on the test disc (SZZP1056C). (Playing any other track will prevent, the HEX screws from being accessed.)
3. Leave the player in play mode and place the player as shown Fig. 2 on page 15.
4. Alternately adjust the two mechanical adjusting screws with the 2.0mm allen wrench (SZZP1101C) until the vertical fluctuation of RF signal is minimized and the eye pattern is most stretched. (Refer to right figure)
5. After completing the adjustment, lock the HEX screws with lock paint (RZZ0L01).



※ Most stretched eye pattern.

■ TERMINAL FUNCTION OF IC'S

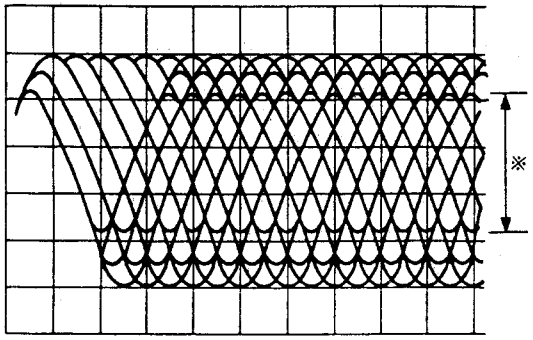
• IC101 (AN8800SCE2): Servo amp

Pin No.	Mark	I/O Division	Function
1	LDG	I	APC loop gain select
2	LDP	I	APC monitor PD polarity select
3	LD	O	Laser power auto control output
4	LPD	I	LD power monitor PD signal
5	GND	—	GND terminal
6	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
7	AMP I	I	RF signal (X30 amp)
8	AMP O	O	
9	RF IN	I	RF AGC signal input
10	RF EQ	—	GND terminal
11	C. AGC	I	AGC detection capacitor input
12	ARF	O	RF signal output
13	C. SBDO	I	Dropout detection capacitor input
14	RF DET	O	RF detection signal ("L": detecting)
15	BDO	O	Dropout detection output
16	V_{CC}	I	Power supply terminal
17	SDO	O	Dropout detection pulse output
18	VAD+	O	Power supply terminal for A/D converter (+)
19	VREF	O	Reference voltage output
20	VAD−	O	Power supply terminal for A/D converter (−)
21	OFTR	O	Off track detection ("H": det.)

Pin No.	Mark	I/O Division	Function
22	PLAY	I	Play signal ("H": ON, "L": OFF)
23	WVEL	I	Double velocity ("H": double, "L": single)
24	TES	I	Tracking error shunt ("H": shunt, "L": output)
25	PTO	O	Potentio amp output
26	PTI	I	Potentio amp input
27	PBO	O	Potentio buffer output
28	POT	I	Potentio buffer input
29	CROSS	O	Tracking error zero cross output
30	TE	O	Tracking error signal
31	TE BAL	I	Oscillation det. signal
32	TBAL	I	Tracking balance adj. input
33	VDET	O	Oscillation det. signal ("H": det.)
34	FE	O	Focusing error signal
35	FBL 2	I	Focusing balance 2
36	FBL 1	I	Focusing balance 1
37	V_{CC}	I	Power supply terminal
38	GND	—	GND terminal
39	PDBD	I	Photo detector Bch input with delay
40	PDA	I	Photo detector Ach input without delay
41	PDB	I	Photo detector Ach input with delay
42	PDAD	I	Photo detector Bch input without delay

(3) BEST EYE (PD BALANCE) ADJUSTMENT

1. Connect the oscilloscope's CH. 1 probe across TJ101 (RF) and TJ102 (GND) on the servo P.C.B. (Refer to Fig. 3 on page 15)
   Oscilloscope setting: VOLT 200mV
   SWEEP.....0.5μs.
   Input coupling.....AC
2. Switch the player power **ON**, and play the 1kHz (track 1) on the test disc (SZZP1054C).
3. Adjust **VR101** until the vertical fluctuation of RF signal is minimized and the eye pattern is most stretched. (Refer to right figure)



※ Most stretched eye pattern.

(4) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

*** Checking Skip Search**

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

*** Checking Manual Search**

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

*** Checking Playability**

1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

• IC301 (MN6626): Digital signal processor

Pin No.	Mark	I/O Division	Function
1	AVSS	—	GND terminal
2	IREF	I	Reference current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias terminal (Not used, open)
5	DSLF	I/O	DSL loop filter terminal
6	PLLF	I/O	PLL loop filter terminal
7	AVDD	I	Power supply terminal
8	RSEL	I	RF signal polarity setting terminal (Not used, connected to VDD)
9 ∫ 16	TBUS7 ∫ TBUS0	O	Test terminal
17	FLAG	O	Flag terminal
18	IPFLAG	O	Interpolation flag terminal
19	FCLK	O	Crystal frame clock (Not used, open)
20	BYTCK	O	Byte clock (Not used, open)
21	WDCK	O	Word clock (Not used, open)
22	$\overline{RST}$	I	Reset terminal
23	TX	O	Digital audio signal
24	LDG	O	Lch deglitch signal (Not used, open)
25	RDG	O	Rch deglitch signal (Not used, open)
26	SRDATA	O	Serial data output (MSB first)
27	SCK	O	Serial bit clock output
28	LRCK	O	L/R discriminating signal
29	XCK	O	Crystal OSC terminal (f=16.9344MHz)
30	PMCK	O	Frequency division clock signal (Not used, open) ($f=\frac{1}{192}\times CK=88.2kHz$)
31	CSEL	I	Test terminal (Connected to GND)
32	PSEL		
33	X1	I	Crystal OSC terminal (f=16.9344MHz)
34	X2	O	
35	VSS	—	GND terminal
36	SUBQ	O	Sub-code Q data
37	SQCK	I	Sub-code Q register clock
38	$\overline{CLDCK}$	O	Sub-code frame clock (f=7.35kHz) (Not used, open)

Pin No.	Mark	I/O Division	Function
39	BLKCK	O	Sub-code block clock (f=75Hz)
40	DEMPH	O	De-emphasis ON signal ("H": ON)
41	MEMP	I	Emphasis signal
42	MLD	I	Command load signal ("L": LOAD)
43	MCLK	I	Command clock signal
44	MDATA	I	Command data signal
45	D MUTE	I	Muting input ("H": MUTE)
46	SMCK	O	System clock (f=4.2336MHz)
47	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
48	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG)
49	SUBC	O	Sub-code serial output data (Not used, open)
50	SBCK	I	Sub-code serial output clock (Not used, open)
51	$\overline{TRON}$	I	Tracking servo ON signal ("L": ON)
52	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo)
53	PC	O	Turntable motor ON signal ("L": ON)
54	ECM	O	Turntable motor drive signal (Forced mode)
55	ECS	O	Turntable motor drive signal (Servo error signal)
56	VDD	I	Power supply terminal
57	$\overline{TEST}$	I	Test terminal (Normal: "H")
58	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)
59	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz)
60	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
61	DO	I	Drop-out detection signal ("H": Drop-out) (Not used, connected to GND)
62	EFM	O	EFM signal (Not used, open)
63	PCK	O	PLL extract clock (f=4.3218MHz)
64	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)

• IC102 (MN6650): Digital servo processor

Pin No.	Mark	I/O Division	Function
1	TES	O	Tracking error shunt signal ("H": shunt)
2	PLAY	O	Play signal ("H": play)
3	/RFDET	I	RF det. signal ("L": det.)
4	DO	I	Dropout signal ("H": dropout)
5	OFT	I	Off track signal ("H": off track)
6	ARF	I	RF signal input
7	WVEL	O	Double velocity status signal ("H": double)
8	PBO	I	Potensio buffer signal (analog input)
9	TE	I	Tracking error signal (analog input)
10	FE	I	Focus error signal (analog input)
11	VR2	I	Reference voltage for A/D (Low)
12	VR1	I	Reference voltage for A/D (High)
13	LDON	O	Laser power control ("H": ON)
14	V_{SS}	—	GND terminal
15	AV_{SS}	—	GND terminal
16	AV_{DD}	I	Power supply terminal
17	V_{DD}	I	Power supply terminal
18	TRV	O	Traverse servo control output
19	TVD	O	Traverse drive signal output
20	FOD	O	Focus drive signal output
21	TRD	O	Tracking drive signal output

Pin No.	Mark	I/O Division	Function
22	KICK	O	Kick pulse output
23	/TEST	I	Test terminal
24	V_{SS}	—	GND terminal
25	CLVS	I	Spindle servo phase synchro signal ("H": CLV, "L": Rough servo)
26	/TRON	O	Tracking servo ON signal ("L": ON)
27	MDATA	I	Command data signal
28	MCLK	I	Command clock signal
29	MLD	I	Command load signal ("L": LOAD)
30	SENSE	O	Sense signal
31	/FLOCK	O	Optical servo condition (focus) output
32	/TLOCK	O	Optical servo condition (tracking) output
33	/RST	I	Reset signal ("L": reset)
34	XI	I	Clock input (f=16.9344MHz)
35 ⟆ 38	T0 ⟆ T3	O	Test terminal (Ordinaly: open)
39 ⟆ 41	T4 ⟆ T6	I	Test terminal (Ordinaly: L)
42	VDET	I	Oscillation det. signal ("H": det.)
43	TBAL	O	Tracking balance adj. output
44	TRCRS	I	Track cross signal input

• IC601 (MND1616PKP): System control & FL drive

Pin No.	Mark	I/O Division	Function
1 ⟆ 5	D4 ⟆ D0	O	FL grid signal output
6 ⟆ 25	S0 ⟆ S19	O	FL anode signal output
26	S20	—	(Not used, open)
27	P65		
28	P66	O	LED drive signal (PAUSE)
29	P67	O	LED drive signal (PLAY)
30 ⟆ 37	P37 ⟆ P30	I	Key return signal
38 ⟆ 41	D3/P93 ⟆ D0/D90	O	Key scan signal
42	VREFL	—	(Not used, connected to GND)
43	CLK	O	Data lock signal
44	ACK	O	Data discrimination signal
45 ⟆ 47	P25 ⟆ P23	O	Key scan signal
48	VOL DOWN	—	(Not used, open)
49	VOL UP		
50	V INO		
51	VREFH	I	Reference voltage input
52	V_{DD}	I	Power supply terminal
53	NC	—	(Not connected)

Pin No.	Mark	I/O Division	Function
54	SMCK	I	Clock terminal (4.2336 MHz)
55	V_{SS}	—	GND terminal
56	XI	I	(Not used, connected to GND)
57	XO	O	(Not used, open)
58	RST	I	Reset signal
59	REMOTE	I	Remote control signal
60	P14	—	(Not used, open)
61	P13		
62	JOG SW	—	(Not used, open)
63	SEND	O	Data transmission command signal
64	REC. V	O	Data receipt command signal
65	REC. E	I	Synchro edit control signal
66	SYNCR	O	
67	JOG 1	—	(Not used, open)
68	JOG 0		
69	SCL	I/O	Serial clock signal
70	SDA	I/O	Serial data signal
71	V_{SS}	—	GND terminal
72	NC	—	(Not used, open)
73	V_{PP}	I	FL drive power supply terminal
74 ⟆ 84	D15 ⟆ D5	O	FL grid signal

• IC603 (X24LC01P): E^2 PROM

Pin No.	Mark	I/O Division	Function
1 ⟆ 3	NC	—	(Not connected)
4	V_{SS}	—	GND terminal
5	SDA	I/O	Serial data signal

Pin No.	Mark	I/O Division	Function
6	SCL	I/O	Serial clock signal
7	NC	——	(Not connected)
8	V_{CC}	I	Power supply terminal

• IC401 (MN1554PKK6): System control

Pin No.	Mark	I/O Division	Function
1	MUTE RELAY	O	Muting output
2	PLUNGER	—	(Not used, open)
3	SYNC	—	(Not used, open)
4	SIRQ	I	(Not used, connected to power supply.)
5	BLKCK	I	Sub-code block clock (f=75Hz)
6	SQCK	O	Sub-code Q register clock
7	SBO	—	(Not used, open)
8	SUB Q	I	Sub-code Q data
9	RST	I	Reset terminal
10	CLOSE SW	I	Disc holder "close" det.
11	OPEN SW	I	Disc holder "open" det.
12	NC	—	(Connected to GND)
13			
14	CLOSE	O	Loading motor "close" command signal
15	OPEN	O	Loading motor "open" command signal
16 ∫ 24	NC	—	(Not connected)
25	V_{DD}	I	Power supply terminal
26 ∫ 28	NC	—	(Not connected)
29	NC	—	(Connected to GND)
30	MODE	—	(Not used, connected to power supply)
31	FUTA SW	—	
32	MODE	—	(Not used, connected to GND)

Pin No.	Mark	I/O Division	Function
33	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
34	TLOCK	I	Optical servo condition (tracking) input
35	FLOCK	I	Optical servo condition (focus) input
36	SENSE	I	Sense signal
37	RECV	I	Data receipt command signal
38	SEND	I	Data transmission command signal
39	ACK	I	Data discrimination signal
40	CLK	I	Data lock signal
41 ∫ 44	DATA 0 ∫ DATA 3	I	Key scan signal
45 ∫ 52	NC	—	(Not connected)
53	OSC 2	I	Clock input terminal (4.2336MHz)
54	OSC 1		
55	X1	—	(Not used, connected to GND)
56	X0	—	(Not used, open)
57	V_{SS}	—	GND terminal
58	DMUTE	O	Muting output (H: mute)
59	MDATA	O	Command data signal
60	MCLK	O	Command clock signal
61	MLD	O	Command load signal (L: load)
62	TX	—	(Not used, open)
63	EMPH	O	De-emphasis signal
64	SERVO RST	O	Reset signal for servo

• IC801 (MN6474): Digital filter & D/A converter

Pin No.	Mark	I/O Division	Function
1	MLD	I	Command load input (load: L)
2	RSTB	I	Reset command
3	IE	I	Not used, connected to GND
4	TP1	—	TEST terminal
5	TP2	—	
6	TEST1	I	TEST terminal 1 (connected to GND)
7	TEST2	I	TEST terminal 2 (connected to GND)
8	NC	—	Not connected
9	NC	—	Not connected
10	AVDD4	I	Power supply (connected to +4.8V)
11	OUTL (−)	O	Lch data output, (−) terminal
12	AVSS4	I	GND terminal
13	AVSS3	I	GND terminal
14	OUTL (+)	O	Lch data output, (+) terminal
15	AVDD3	I	Power supply (connected to +4.8V)
16	NC	—	Not connected
17	AVDD2	I	Power supply (connected to +4.8V)
18	OUTR (+)	O	Rch data output, (+) terminal
19	AVSS2	I	GND terminal (analog system)
20	AVSS1	I	GND terminal (analog system)
21	OUTR (−)	O	Rch data output, (−) terminal

Pin No.	Mark	I/O Division	Function
22	AVDD1	I	Power supply (connected to +4.8V)
23	DVDD1	I	Power supply (connected to +4.9V)
24	DVSS1	I	GND terminal (digital system)
25	X2	O	Clock output
26	X1	I	Clock input
27	NC	—	Not connected
28	DVDD2	I	Power supply (connected to +4.9V)
29	DVSS2	I	GND terminal (digital system)
30	NSUB	I	Sub-strate terminal (Not used, connected to +4.9V)
31	ZFLGB	O	Zero input detector terminal (Not used, open)
32	192fs	O	192 fs (8.4672MHz) (Not used, open)
33	LRPOL	I	LR clock selector (Not used, connected to +4.9V)
34	LRCLK	I	LR discrimination signal input
35	BCLK	I	Serial bit clock input
36	SRDATA	I	Serial data input (MSB first)
37	DVSS 3	I	GND terminal (digital system)
38	DVDD	I	Power supply (connected to +4.9V)
39	384 fs	O	384 fs (16.9344MHz) output
40	PD	I	Power down terminal (Not used, connected to GND)
41	MDATA	I	Mode control data
42	MCLK	I	Data clock for MDATA

• IC103 (AN8377N): Traverse motor drive

Pin No.	Mark	I/O Division	Function
1	P V_{CC}	I	Drive power supply
2	V_{CC}	I	Power supply terminal
3	TB	O	External transistor base driving output
4	VMON	O	Voltage output
5	TVD1	I	Traverse error signal input
6	TD1	I	Tracking error signal input
7	FD1	I	Focus error signal input
8	VREF	I	Reference voltage input

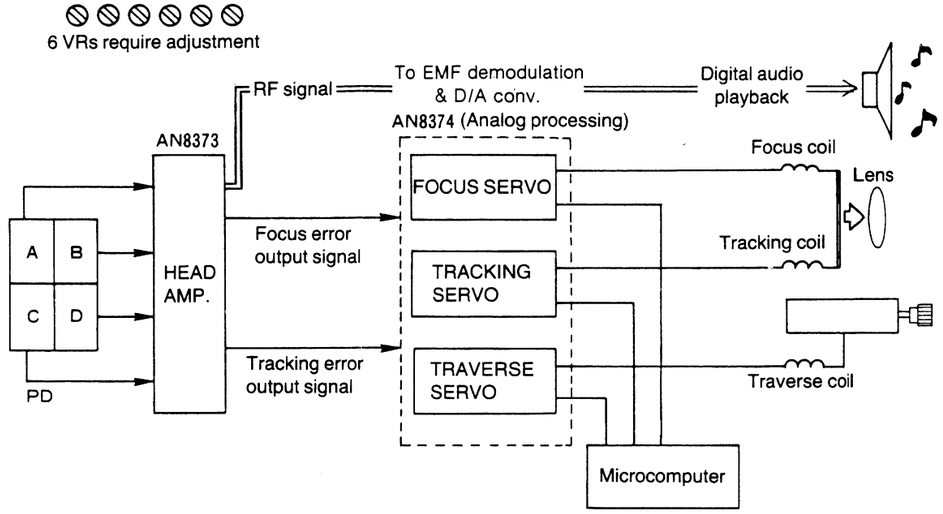
Pin No.	Mark	I/O Division	Function
9	FD+	O	Non-inverting output of focus driver
10	FD−	O	Inverting output of focus driver
11	TD+	O	Non-inverting output of tracking driver
12	TD−	O	Inverting output of tracking driver
13	TVD+	O	Non-inverting output of traverse driver
14	TVD−	O	Inverting output of driver
15	/RST	O	Reset signal output
16	PC	I	PC input (connect to GND)

■ DIGITAL SERVO SYSTEM

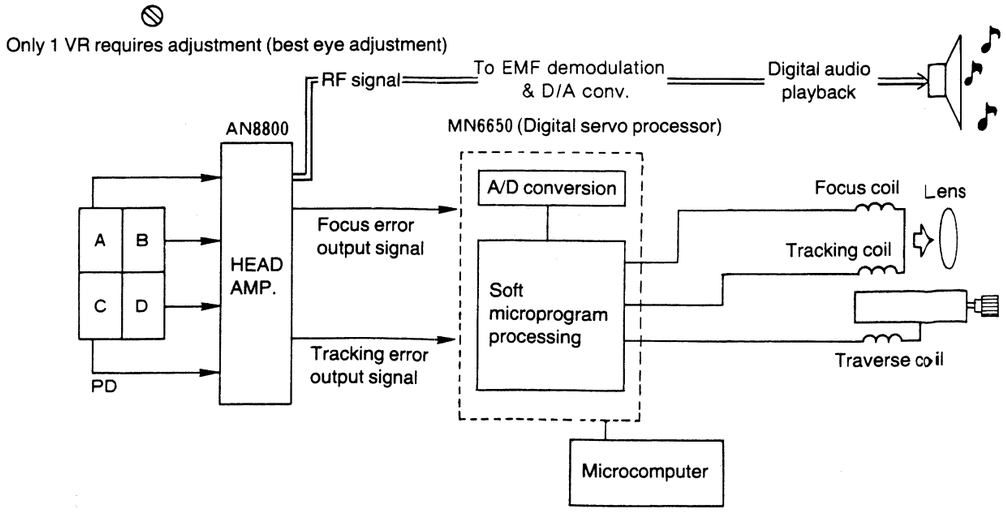
The newly-developed digital servo system is adopted in the servo circuit of the unit's CD player instead of the ordinary analog servo system.

1. The diagrams shown below represent differences between the analog servo and digital servo systems. The HEAD AMP. output signals (i.e., focu error and tracksing error output signals) are analog. These analog signals are converted to the 8-bit digital signals through the MN6650. The MN6650 performs the following adjustments automatically; focus offset, tracking offset, focus gain, tracking gain, and tracking balance adjustme The outputs from the MN6650 such as the focus coil driving signal, tracking coil driving signal, and traverse motor driving signal are converted to analog signals again and sent to the coils and motor to perform proper servo control for a disc.

ANALOG SERVO SYSTEM



DIGITAL SERVO SYSTEM



Function
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(connected to +4.9V)
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d
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digital system)
minal nected to +4.9V)
ector terminal n)
Hz) (Not used, open)
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digital system)
(connected to +4.9V)
MHz) output
erminal nected to GND)
data
MDATA

Function
ing output of focus
output of focus driver
ing output of tracking
output of tracking
ing output of traverse
output of driver
nal output
connect to GND)

■ DIGITAL SERVO SYSTEM

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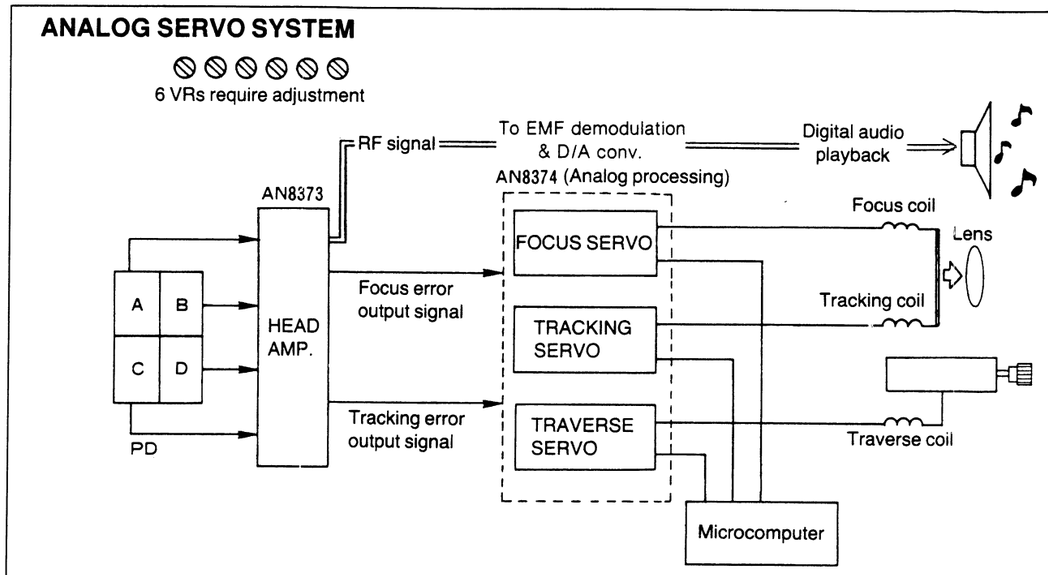
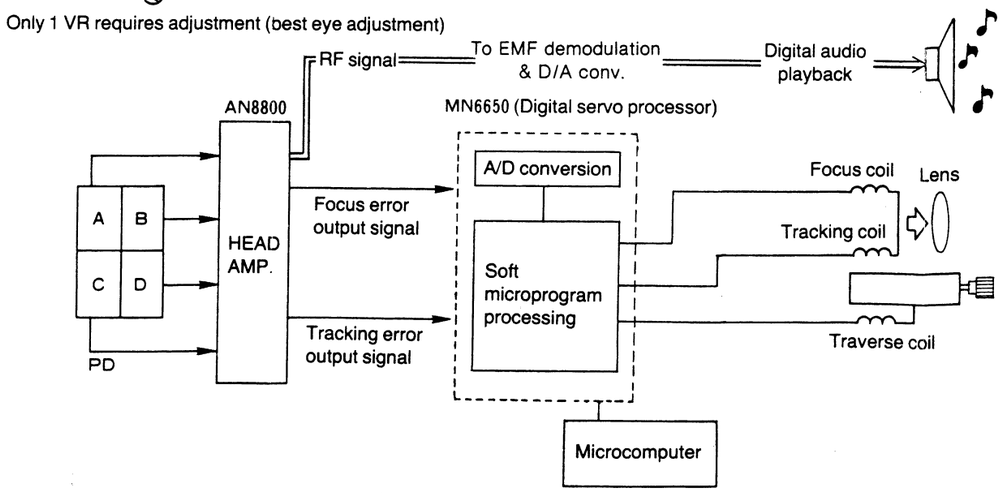
ANALOG SERVO SYSTEM



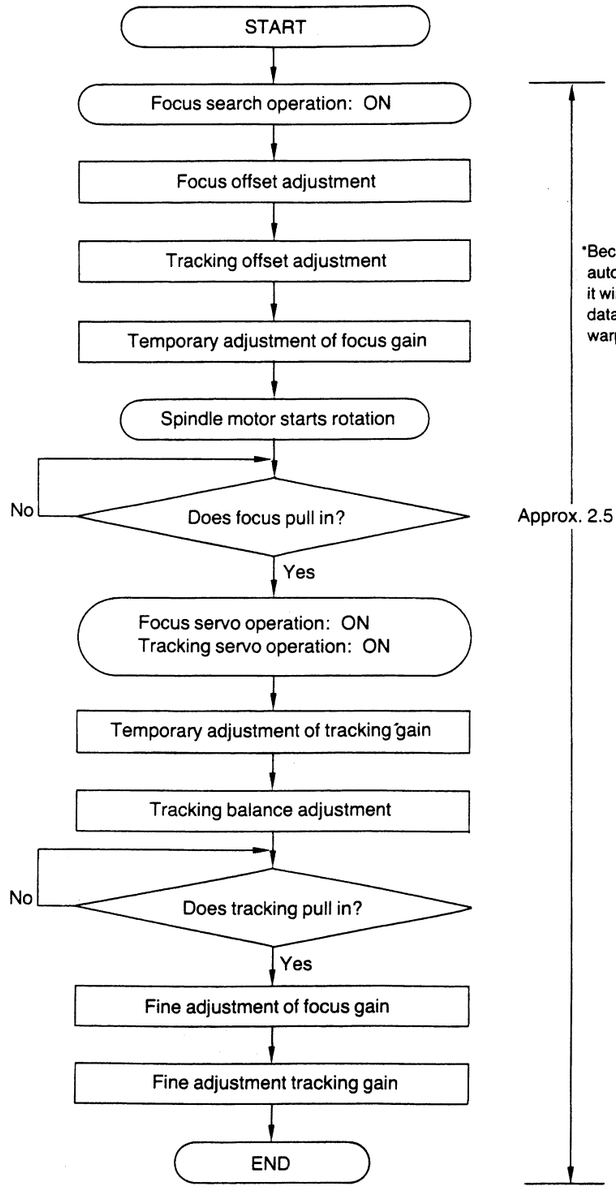
DIGITAL SERVO SYSTEM



2. The servo processor IC MN6650 of the newly-developed digital servo circuit automatically performs the following adjustments which were originally adjusted manually in the conventional analog servo circuit:
(1) Focus offset, (2) Tracking offset, (3) Focus gain, (4) Tracking gain, and (5) Tracking balance. Therefore, you do not have to perform the above-mentioned electrical adjustments. The unit optimizes the servo for each loaded disc.
[You must perform the best eye (PD balance) adjustment manualy.]

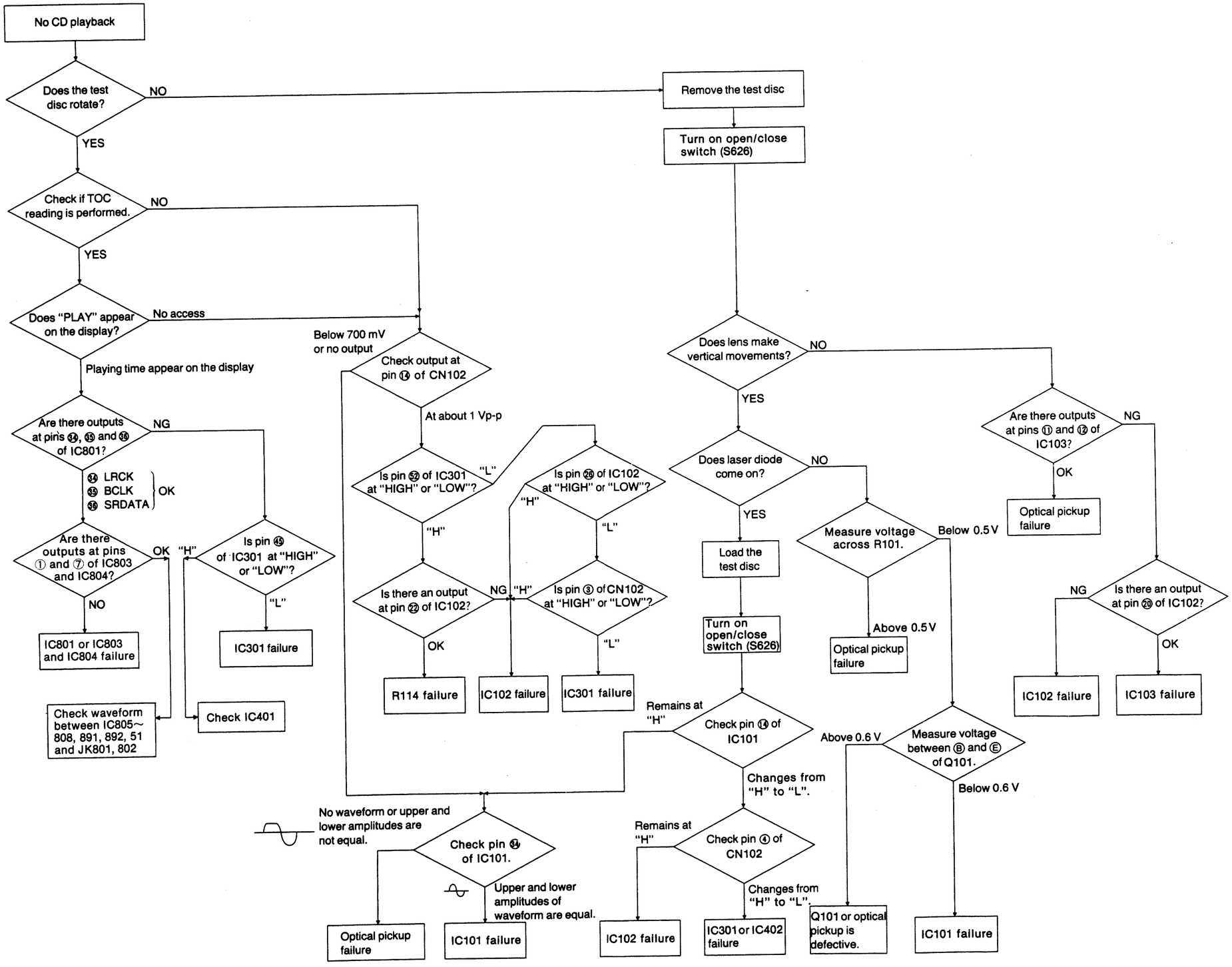
The following flow chart shows the sequence of automatic adjustments.

●Flow chart on automatic adjustment sequence



*Because the microcomputer precisely performs automatic adjustments as shown in the flow chart, it will take approx. 5 seconds to finish reading TOC data if a used disc is eccentric one or its surface is warped.

■TROUBLESHOOTING GUIDE

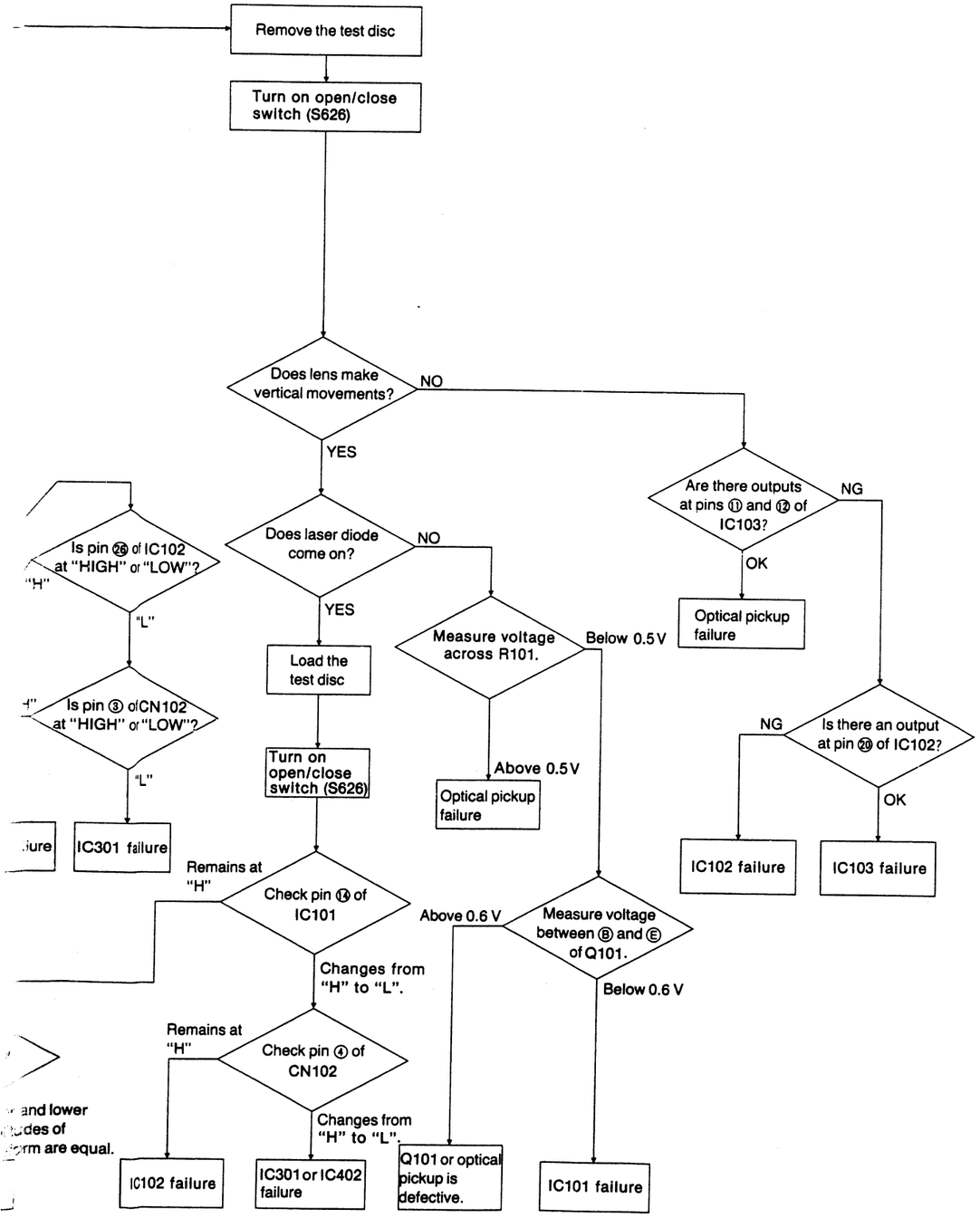


■INTERN

• Grid cor

• Anode c

• Pin cor



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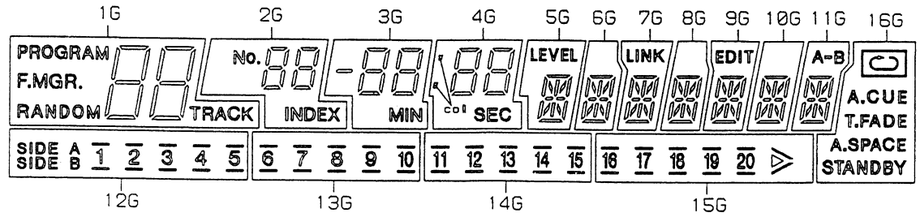
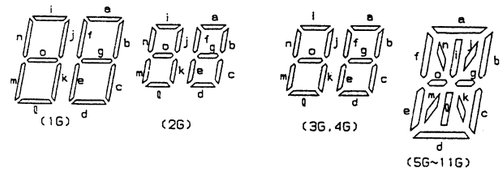
■ INTERNAL CONNECTION OF FL

• **Grid connection diagram**





• **Anode connection table**

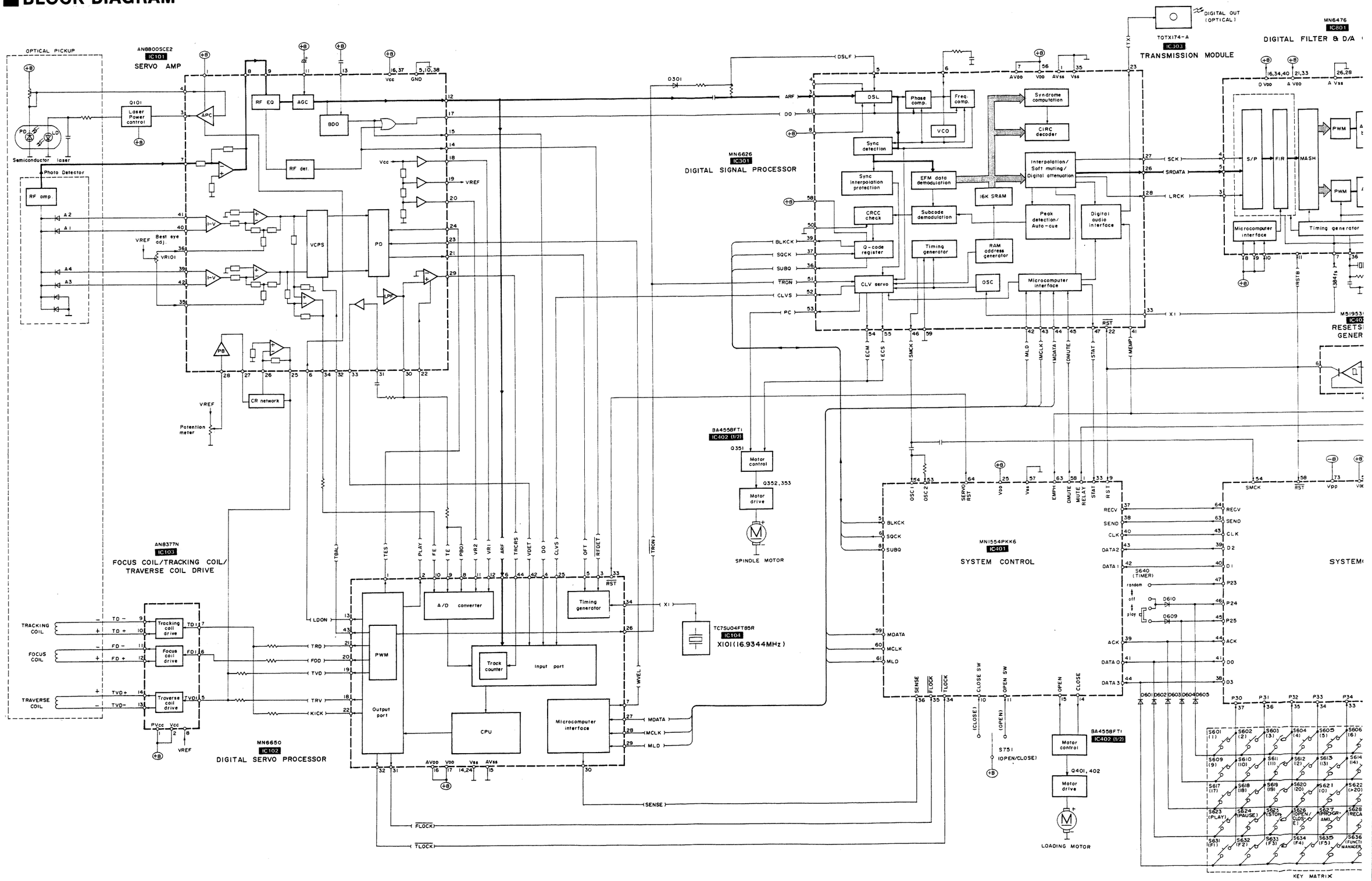
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G
P1	a	a	a	a	a	a	a	a	a	a	a	1	6	11	16	
P2	b	b	b	b	b	b	b	b	b	b	b	– (1)	– (6)	– (11)	– (16)	A.CUE
P3	c	c	c	c	c	c	c	c	c	c	c	– (1)	– (6)	– (11)	– (16)	T.FADE
P4	d	d	d	d	d	d	d	d	d	d	d	SIDE A	–	–	–	A.SPACE
P5	e	e	e	e	e	e	e	e	e	e	e	2	7	12	17	STANDBY
P6	f	f	f	f	f	f	f	f	f	f	f	– (2)	– (7)	– (12)	– (17)	–
P7	g	g	g	g	g	g	g	g	g	g	g	(2) –	(7) –	(12) –	(17) –	–
P8	PROGRAM	No.	–	:	LEVEL	–	LINK	–	EDIT	–	A-	SIDE B	–	–	/	–
P9	i	i	i	i	i	i	i	i	i	i	i	3	8	13	18	–
P10	j	j	j	j	j	j	j	j	j	j	j	– (3)	– (8)	– (13)	– (18)	–
P11	k	k	k	k	k	k	k	k	k	k	k	(3) –	(8) –	(13) –	(18) –	–
P12	l	l	l	l	l	l	l	l	l	l	l	–	–	–	▷	–
P13	m	m	m	m	m	m	m	m	m	m	m	4	9	14	19	–
P14	n	n	n	n	n	n	n	n	n	n	n	– (4)	– (9)	– (14)	– (19)	–
P15	o	o	o	o	o	o	o	o	o	o	o	(4) –	(9) –	(14) –	(19) –	–
P16	TRACK	INDEX	MIN	SEC	–	–	–	–	–	–	5	–	–	–	–	–
P17	RANDOM	–	–	–	–	–	–	–	–	–	–	5	10	15	20	–
P18	F.MGR.	–	–	–	–	–	–	–	–	–	–	– (5)	– (10)	– (15)	– (20)	–
P19	–	–	–	–	–	–	–	–	–	–	–	(5) –	(10) –	(15) –	(20) –	–
P20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

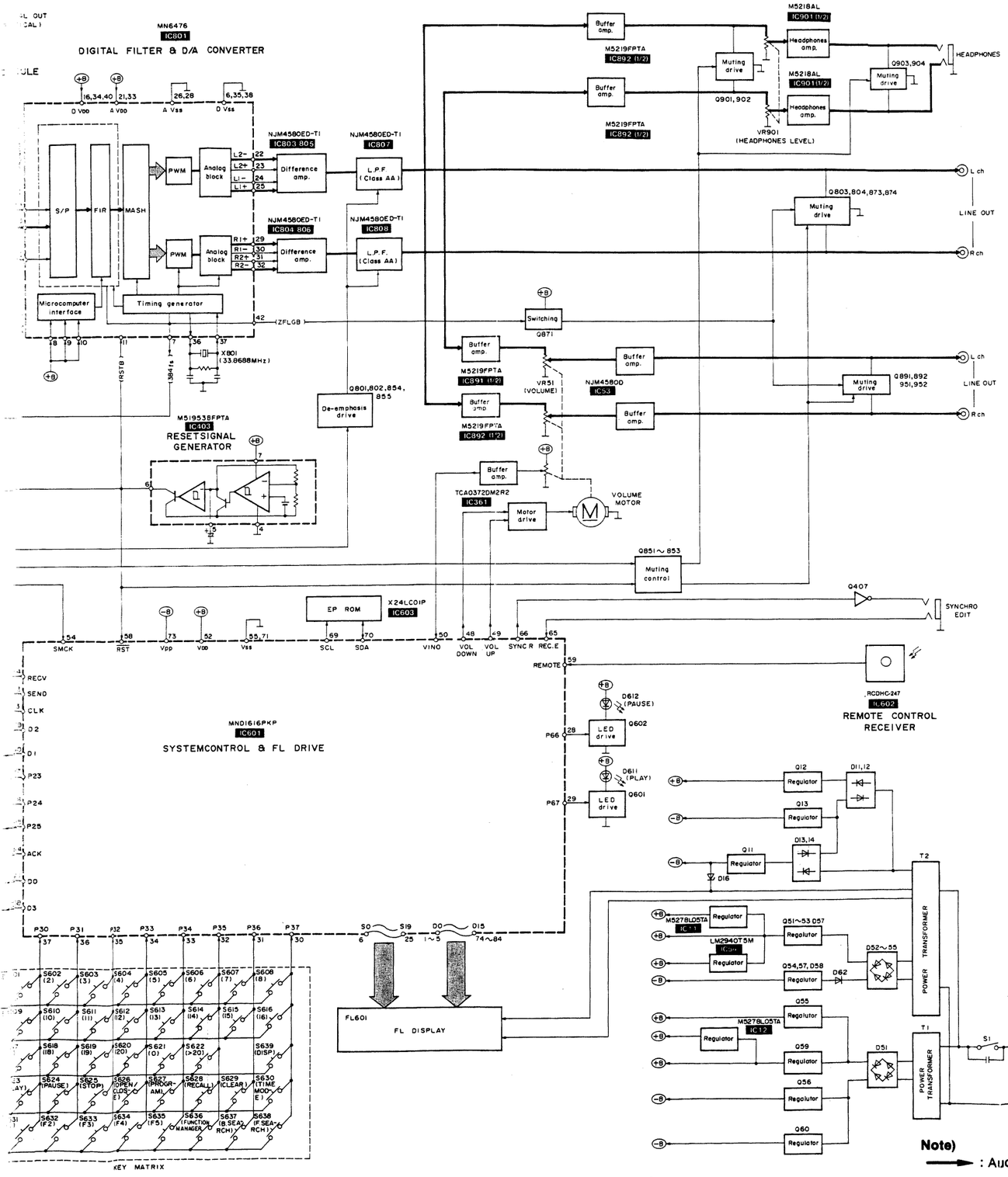
• **Pin connection**

Pin No.	44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 09 08 07 06 05 04 03 02 01
Connection	F2 F1 NP 16G 15G 14G 13G 12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G NC NC NC NC NC P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 NP F1 F2

1) F1,F2 --- Filament
2) NP ------ No pin
3) 1G~16G --- Grid

■ BLOCK DIAGRAM





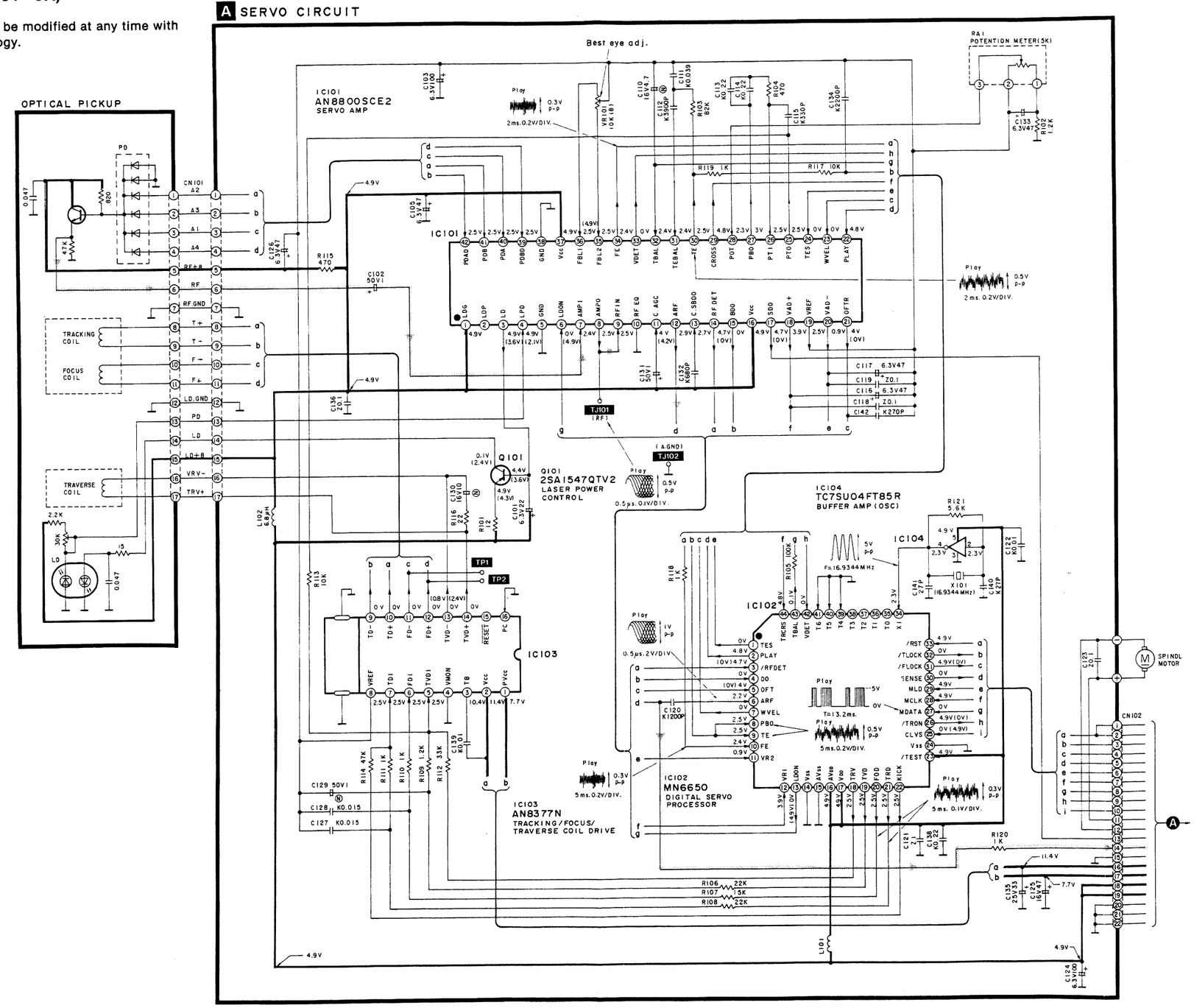
■TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

BA4558FT1	M51953BFPTA M5219FPTA MJM4580ED-T1	TC7SU04FT85R	TCA0372DM2R2	AN8800SCE2
X24LC01P	NJM4580D	AN8377N	MN6476	MN6650
MN1554PKK6 MN6626	MND1616PKP	M5218AL	LM2940T5M	M5278L05TA
RCDHC-247	TOTX174-A	2SA1309QRSTA 2SC3311QRSTA 2SD1450RSTTA	DTA114ESTP DTC114ESTP DTA124ESTP DTC124ESTP	
2SA1547QTV2 2SB1238QSTV6 2SB1240QRTV6 2SD1862QRTV6		2SB1357DEFTA 2SD2037DEFTA	MA723TA 1SS254TA SVD1SR35200V	MA4082MTA MA4091MTA
MA4120MTA MA4330MTA	SVDRDF02M	SVGDAY7851 SVGDPG7851Y		

■SCHEMATIC DIAGRAM

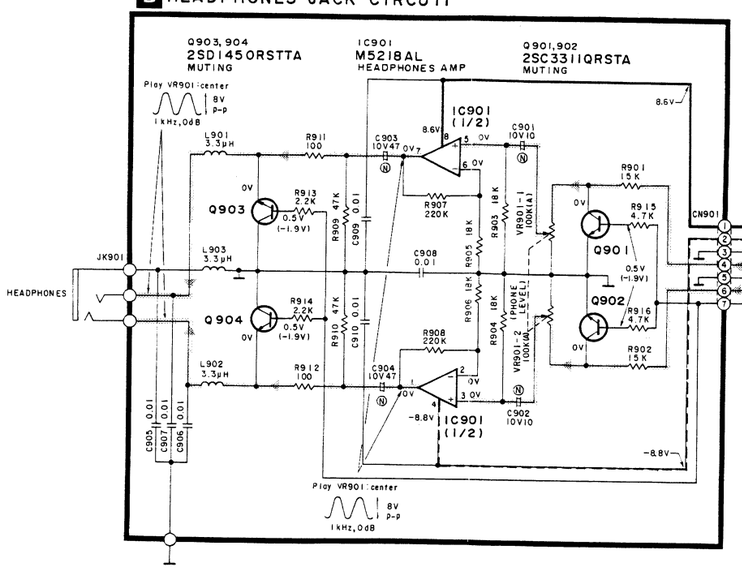
(Parts list on pages 54～57.)

This schematic diagram may be modified at any time with development of new technology.

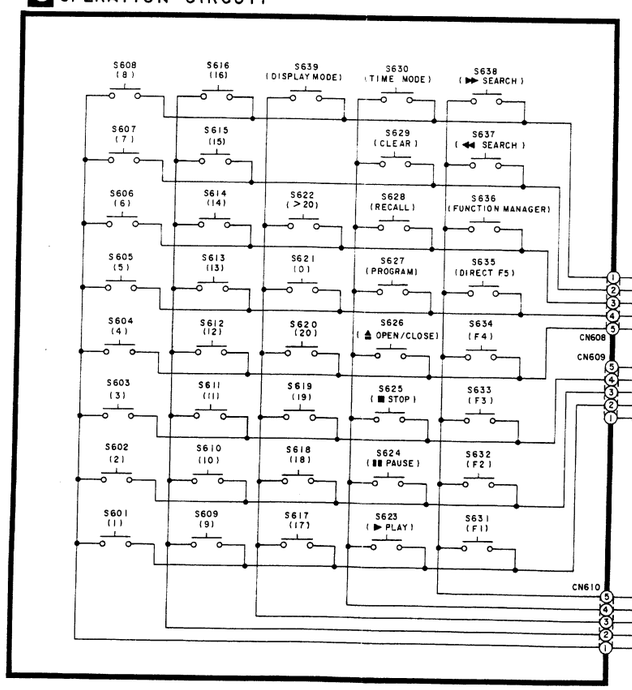


10 11 12 13 14 15 16 17 18 19

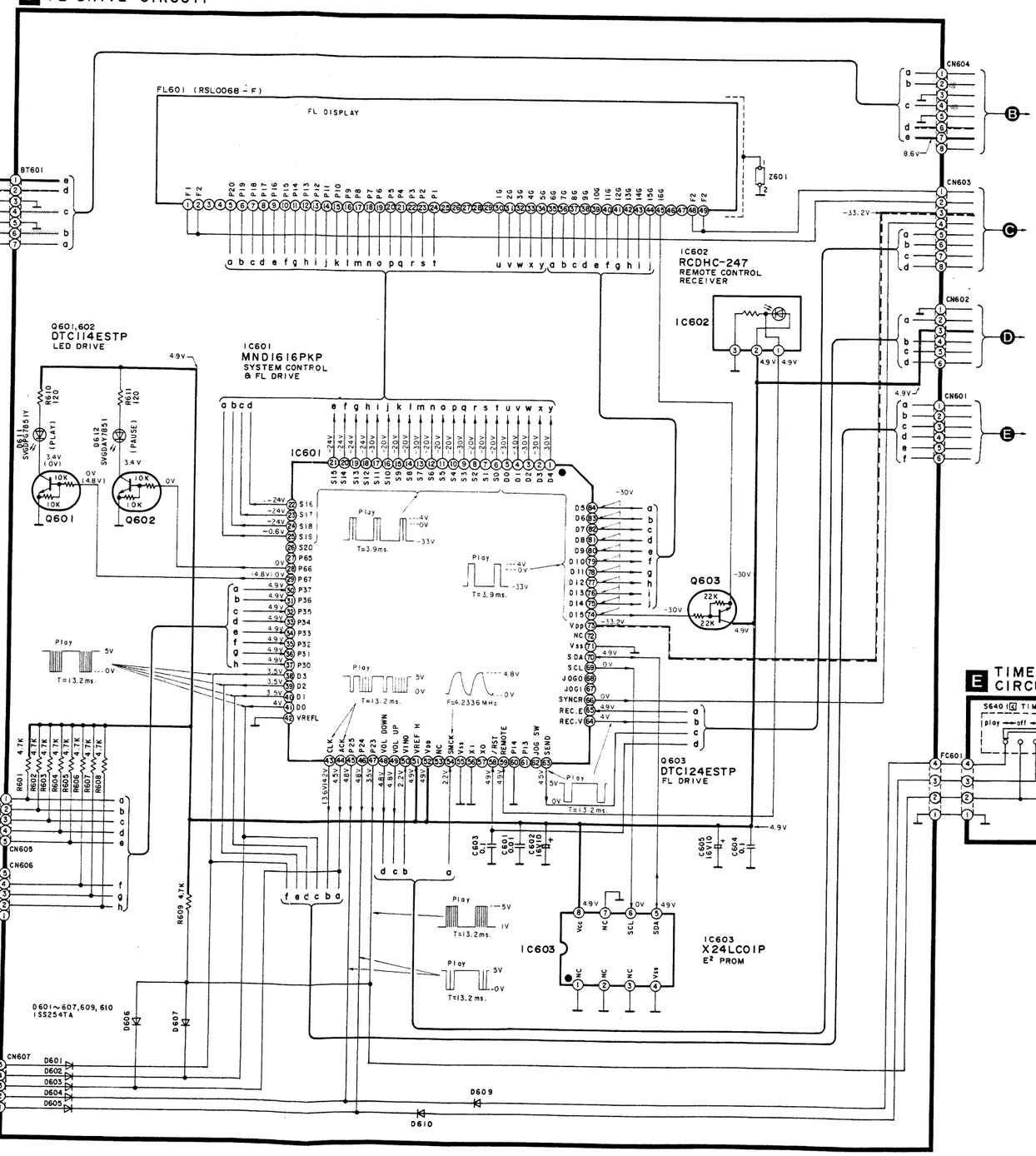
B HEADPHONES JACK CIRCUIT



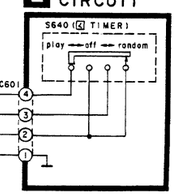
C OPERATION CIRCUIT



D FL DRIVE CIRCUIT



E TIMER SWITCH CIRCUIT



H MAIN CIRCUIT

F LEAF SWITCH CIRCUIT

G MOTOR CIRCUIT

CN304 CN303 CN302 CN301 CN403 CN401 CN402

S751 (OPEN/CLOSE) (OPEN) (CLOSE)

LOADING MOTOR C751 0.022

Q402 2SB1240QRTV6 MOTOR DRIVE

Q401 2SD1862QRTV6 MOTOR DRIVE

Q352 2SD1862QRTV6 MOTOR DRIVE

Q353 2SB1240QRTV6 MOTOR DRIVE

Q351 DTA124ESTP MOTOR CONT.

Q407 DTC124ESTP SWITCHING (SYNCHRO EDIT)

JK401 SYNCHRO EDIT

IC303 TOTX174-A TRANSMISSION MODULE

DIGITAL OUTPUT (OPTICAL)

IC401 MN1554PKK6 SYSTEM CONTROL

IC402 BA4558FTI MOTOR DRIVE

IC403 M51953BFPTA RESET SIGNAL GENERATOR

Q852 DTA124ESTP MUTING CONT.

Q851 DTA114ESTP MUTING CONT.

Q854 DTC124ESTP EMPHASIS CONT.

Q855 DTA124ESTP EMPHASIS CONT.

Q853 DTC124ESTP MUTING CONT.

IC301 MN6626 DIGITAL SIGNAL PROCESSOR

IC801 MN6476 DIGITAL FILTER & D/A CONVERTER

Q871 DTA124ESTP MUTING CONT.

IC361 TCA0372DM2R2 VOLUME MOTOR CONTROL

IC12 M5278L05TA REGULATOR

IC11 M5278L05TA REGULATOR

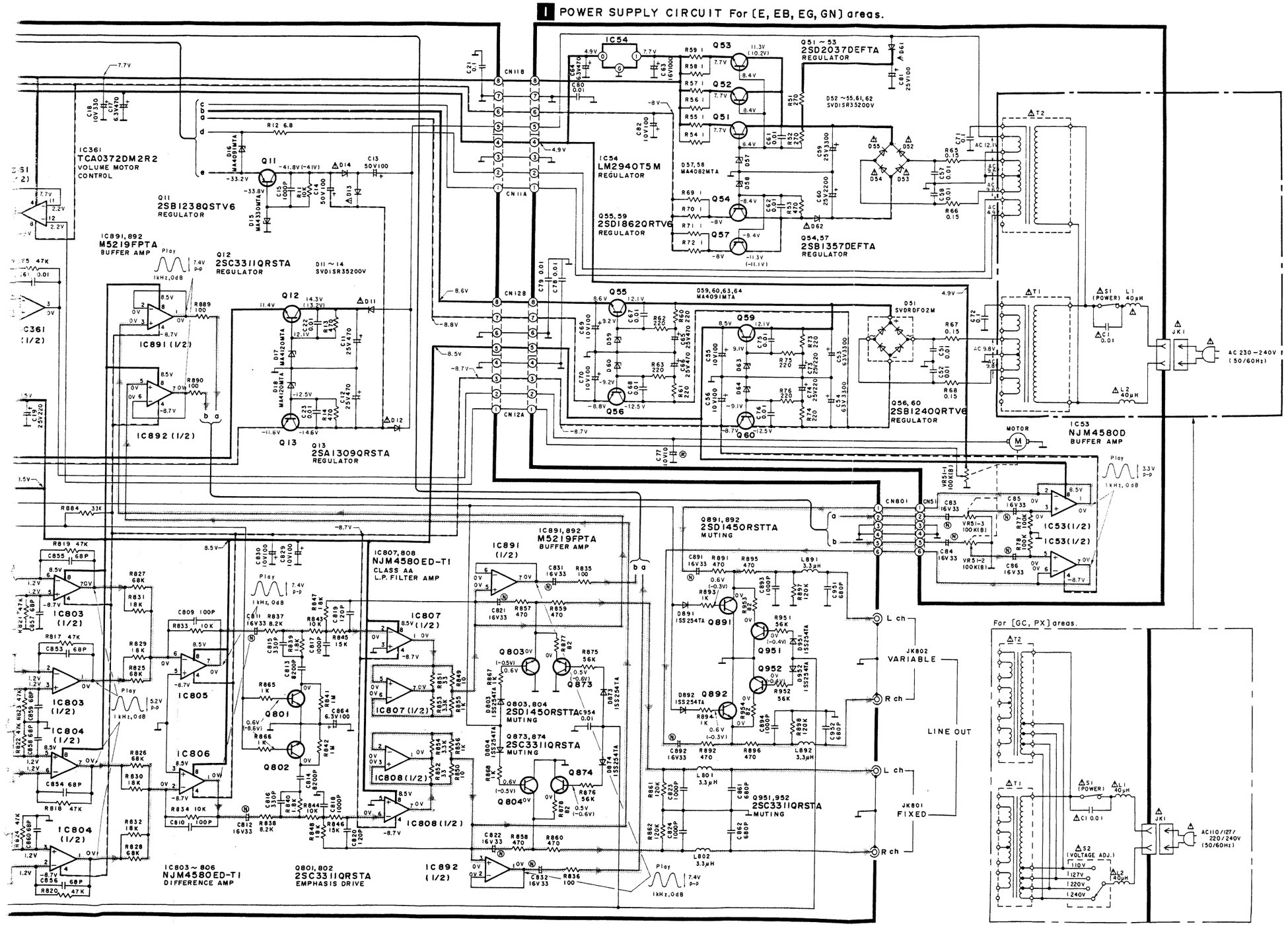
IC891,892 M5219FPTA BUFFER AMP

IC803 (1/2)

IC804 (1/2)

30 31 32 33 34 35 36 37

I POWER SUPPLY CIRCUIT For [E, EB, EG, GN] areas.



Note:

- **S1** : Power (POWER, ▟ OFF ▙ ON) switch in "ON" position.
- **S2** : Voltage adjustment switch in "240V" position. (110V↔127V↔220V↔240V) [For (GC, PX) areas.]
- **S601~621** : Numeric (0~20) switches.
  [S601: 1, S602: 2, S603: 3, S604: 4, S605: 5, S606: 6, S607: 7, S608: 8, S609: 9, S610: 10, S611: 11, S612: 12, S613: 13, S614: 14, S615: 15, S616: 16, S617: 17, S618: 18, S619: 19, S620: 20, S621: 0]
- **S622** : Input mode (> 20) switch.
- **S623** : Play (▶ PLAY) switch.
- **S624** : Pause (❚❚ PAUSE) switch.
- **S625** : Stop (■ STOP) switch.
- **S626** : Disc holder open/close (▲ OPEN/CLOSE) switch.
- **S627** : Program (PROGRAM) switch.
- **S628** : Recall (RECALL) switch.
- **S629** : Clear (CLEAR) switch.
- **S630** : Time mode select (TIME MODE) switch.
- **S631~634** : Function (F1~F4) switches. [S631: F1, S632: F2, F633: F3, S634: F4]
- **S635** : Direct (DIRECT, F5) switch.
- **S636** : Function manager (FUNCTION MANAGER) switch.
- **S637, 638** : Search (SEARCH) switches. [S637: ◀◀, S638: ▶▶]
- **S639** : Display mode (DISPLAY MODE) switch.
- **S640** : Timer ([L]TIMER) switch in "PLAY" position. (PLAY↔OFF↔RANDOM)
- **S751** : Disc holder open/close detector switch.

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  * The parenthesized are the values of voltage generated during playing (Test disc 1kHz, L+R, 0dB), others are voltage values in stop mode.
- Important safety notice:
  Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The supply part number is described alone in the replacement parts list.

Part No.	Production Part No.	Supply Part No.
IC54	LM2940T5M	LM2940T5
IC402	BA4558FT1	SVIBA4558F
IC602	RCDHC-247	RCD0003
IC891, 892	M5219FPTA	M5219FP
IC901	M5218AL	M5218L

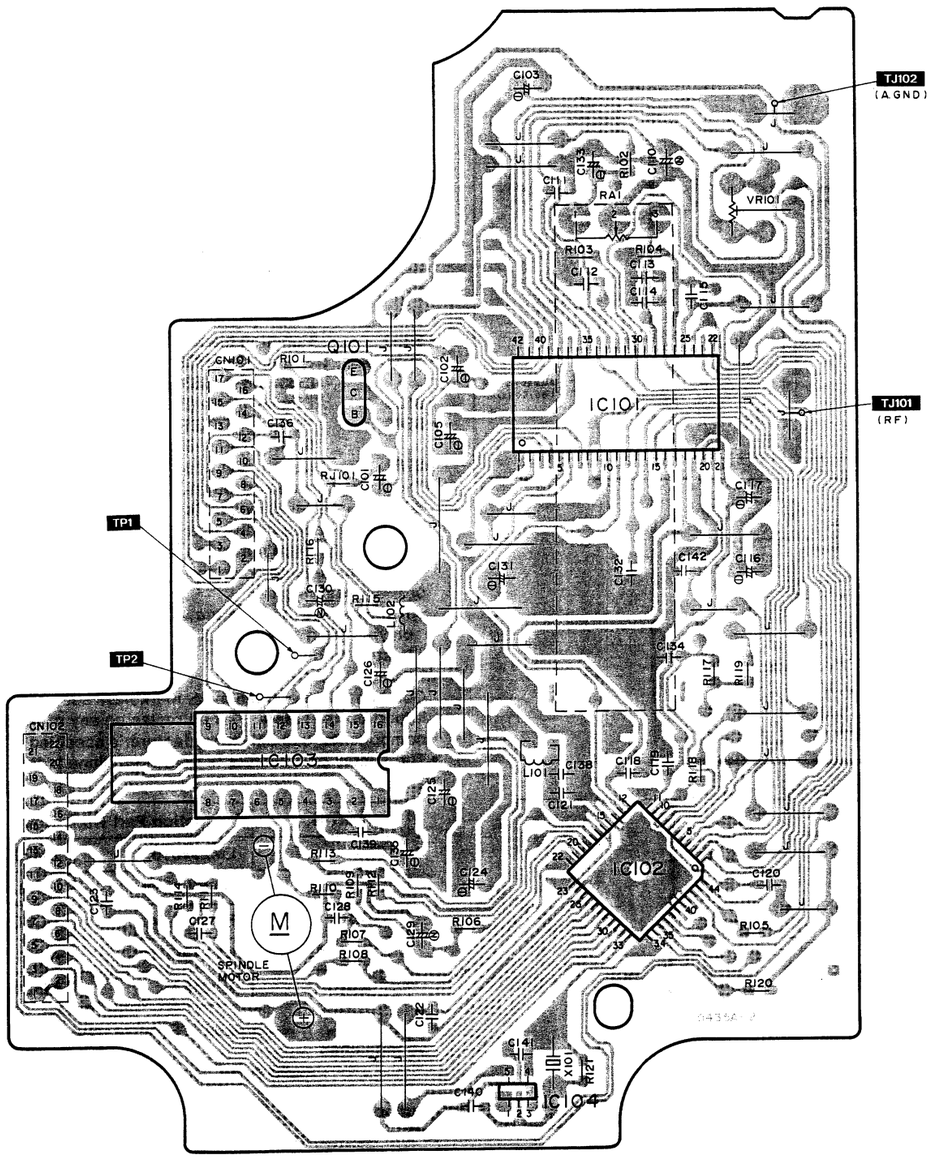
- ▬▬▬ / ▬ ▬ ▬ : Positive voltage lines and negative voltage lines.
  ▒▒▒ : audio signal lines.

Caution!

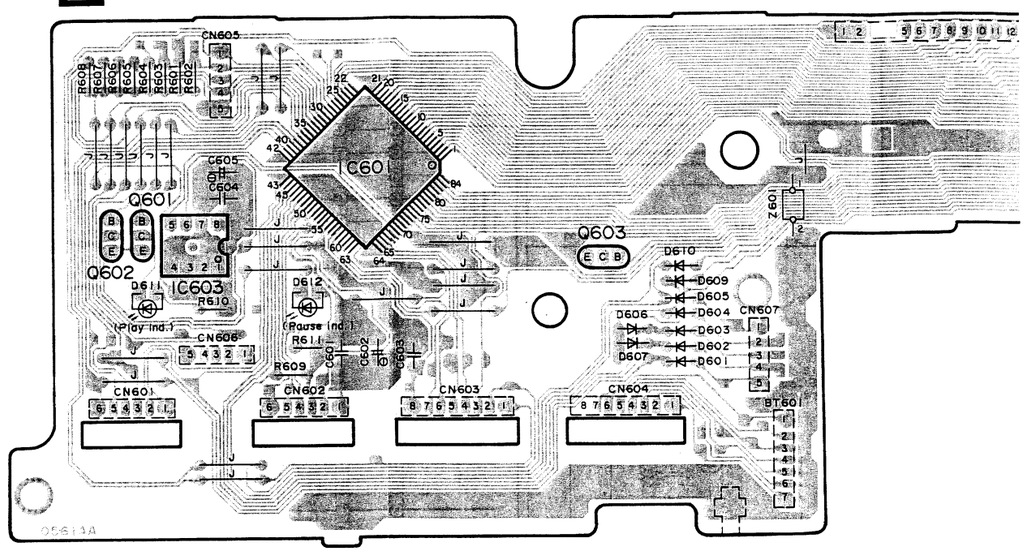
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

■PRINTED CIRCUIT BOARDS

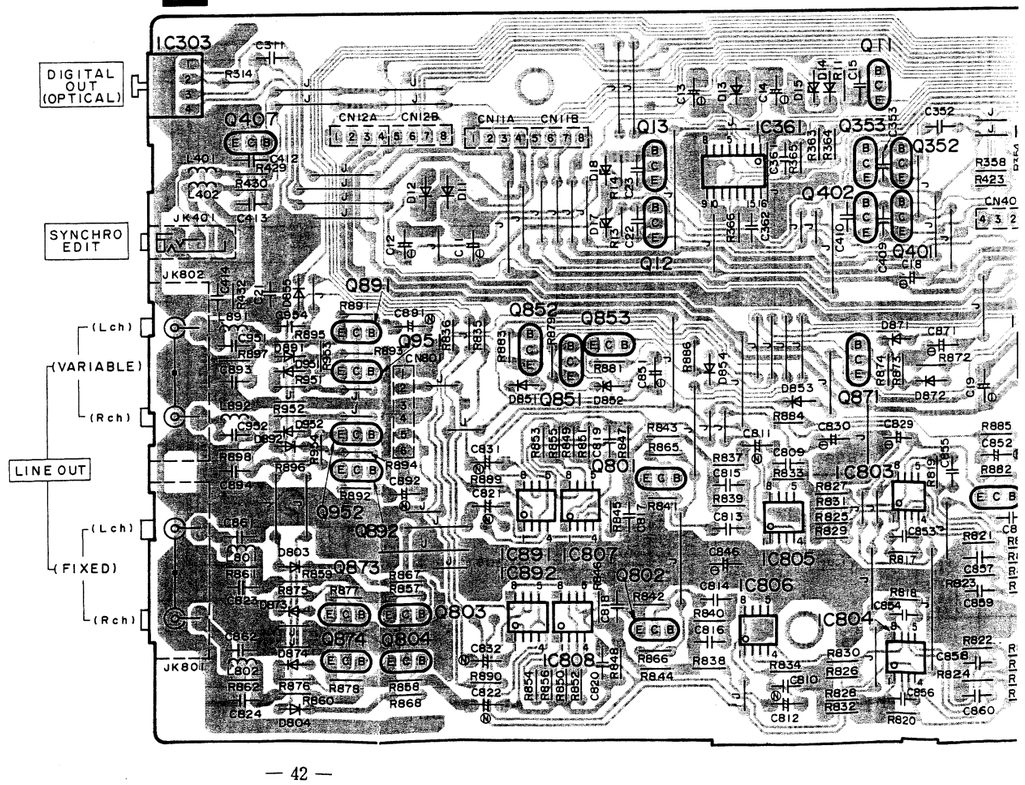
A SERVO P.C.B.



D FL DRIVE P.C.B.

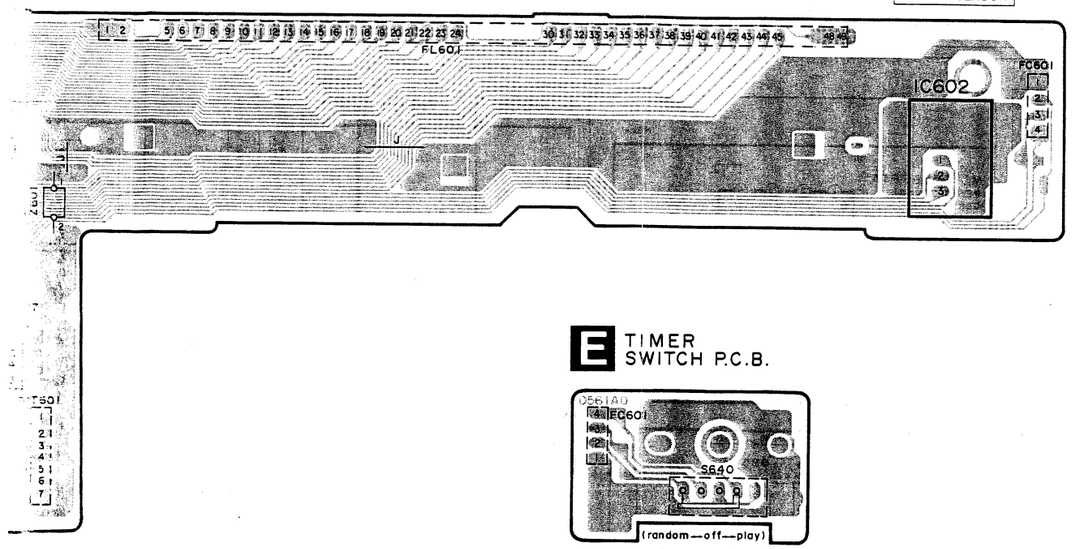


H MAIN P.C.B.

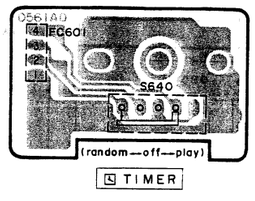


10 11 12 13 14 15 16 17 18 19

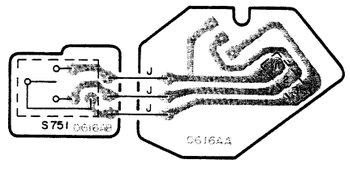
REMOTE SENSOR



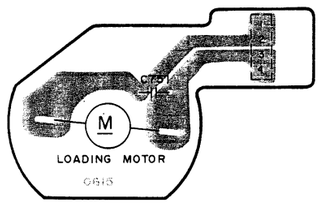
E TIMER SWITCH P.C.B.

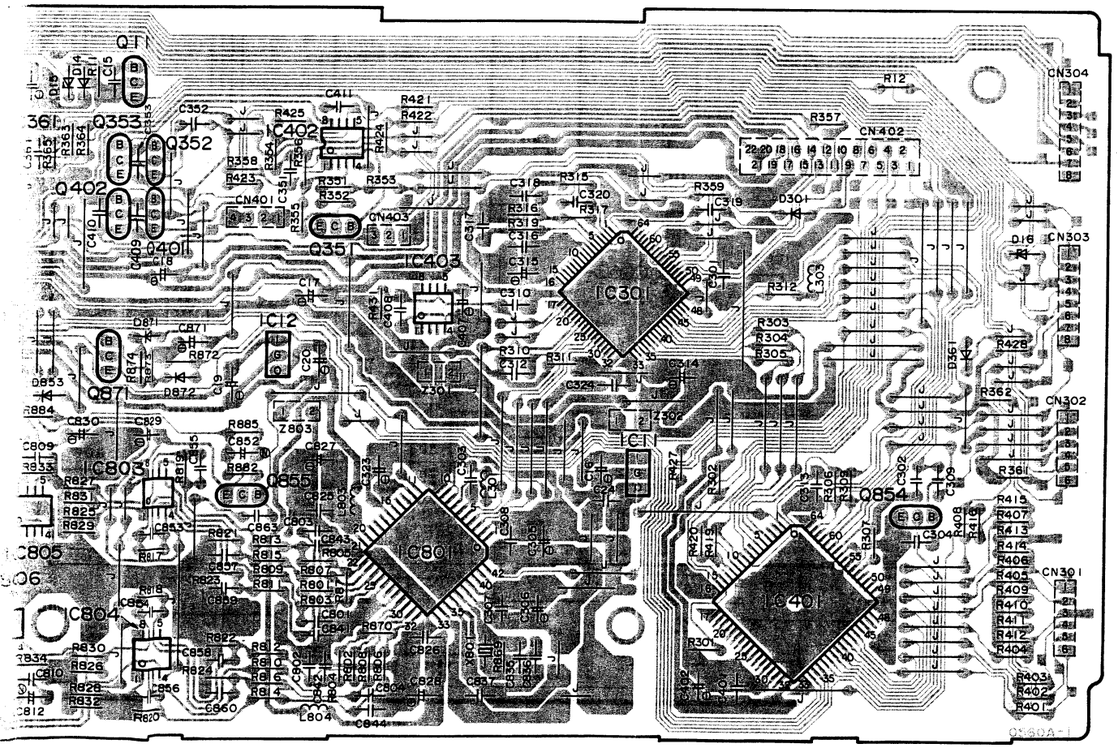


F LEAF SWITCH P.C.B.

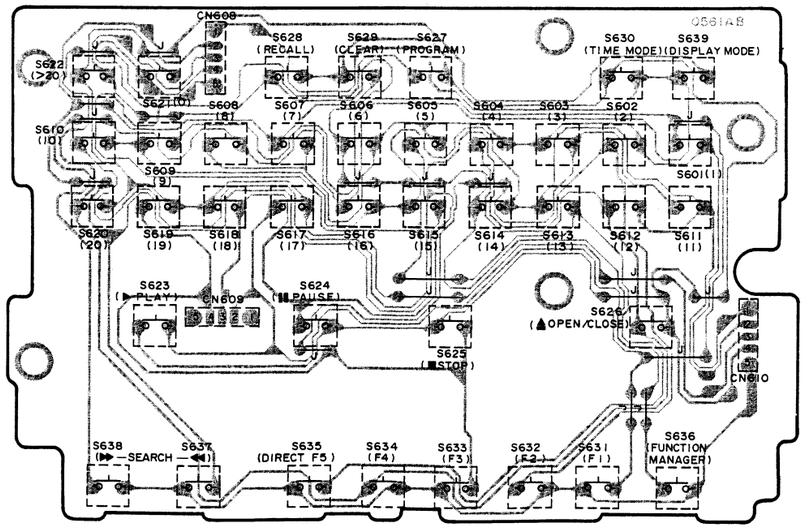


G MOTOR P.C.B.

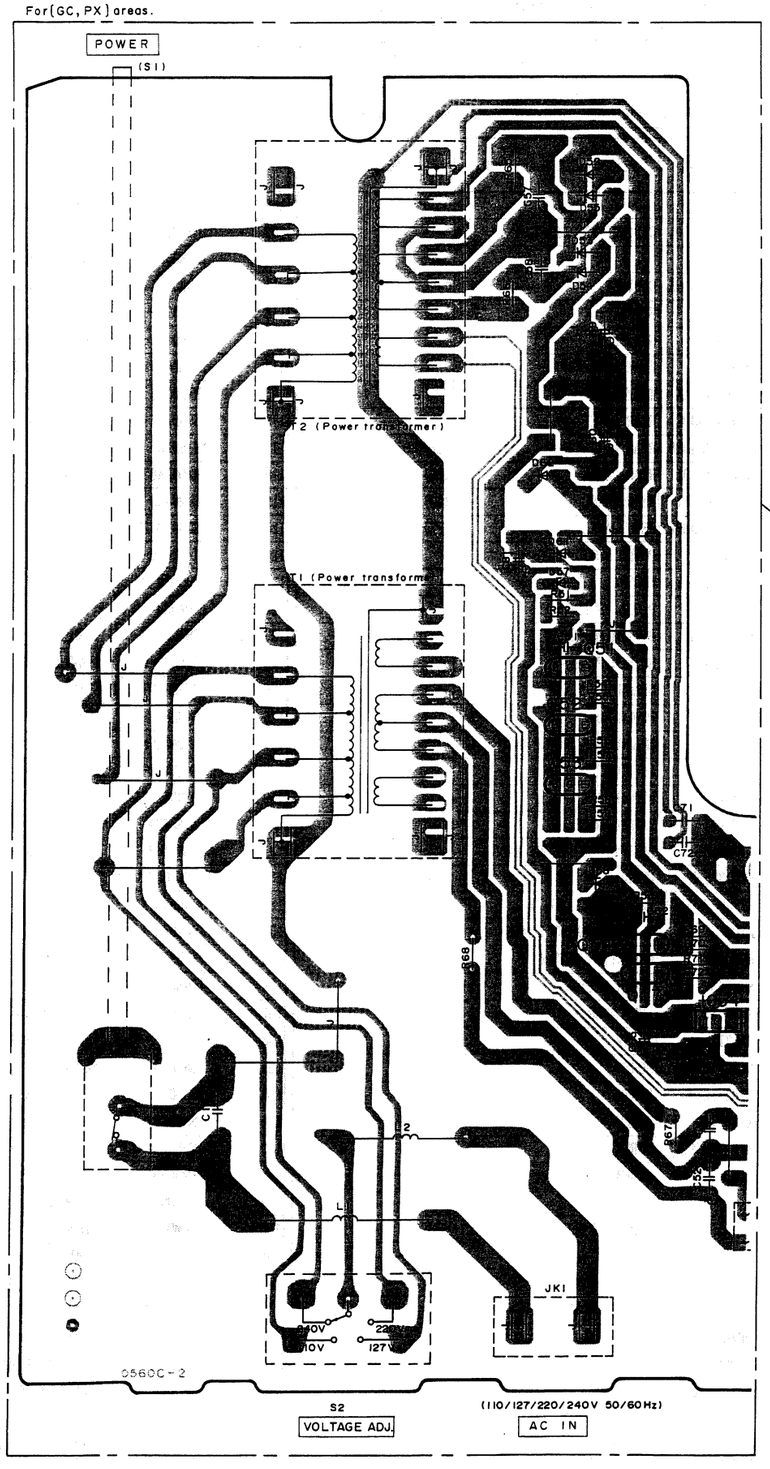


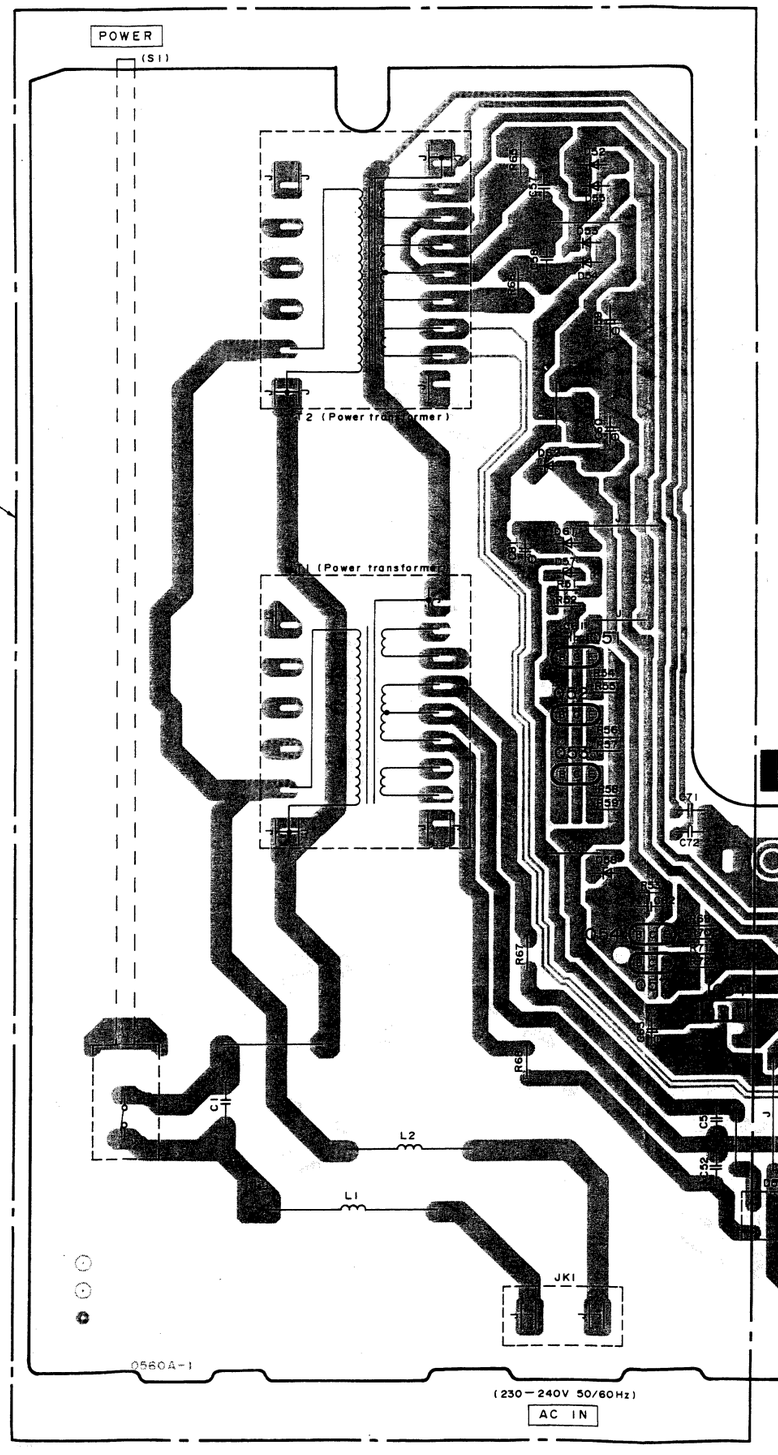


C OPERATION P.C.B.



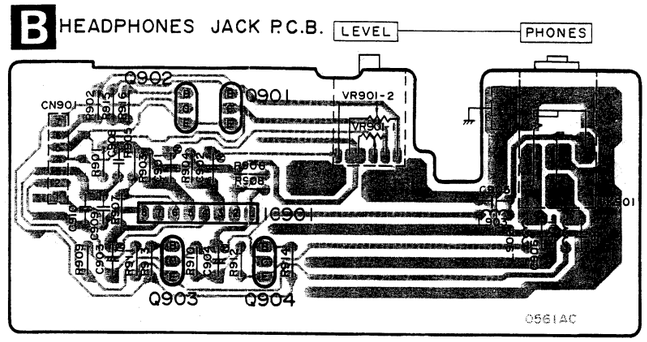
For(GC, PX) areas.



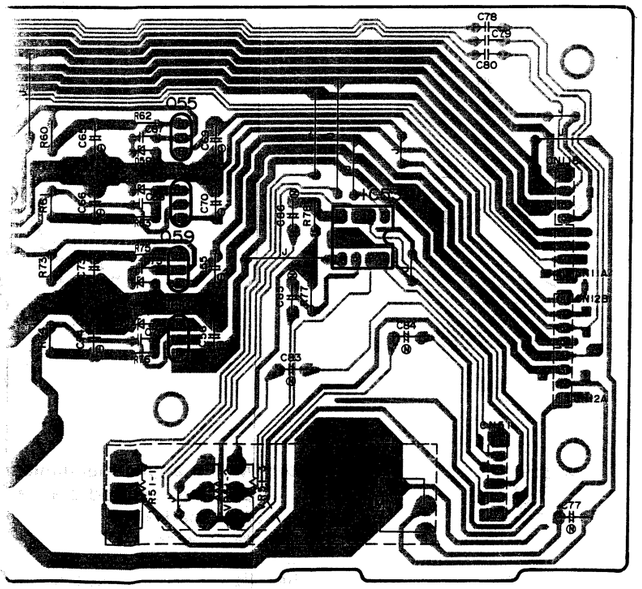


1 POWER SUPPLY P.C.B. For(E, EB, EG, GN) areas.

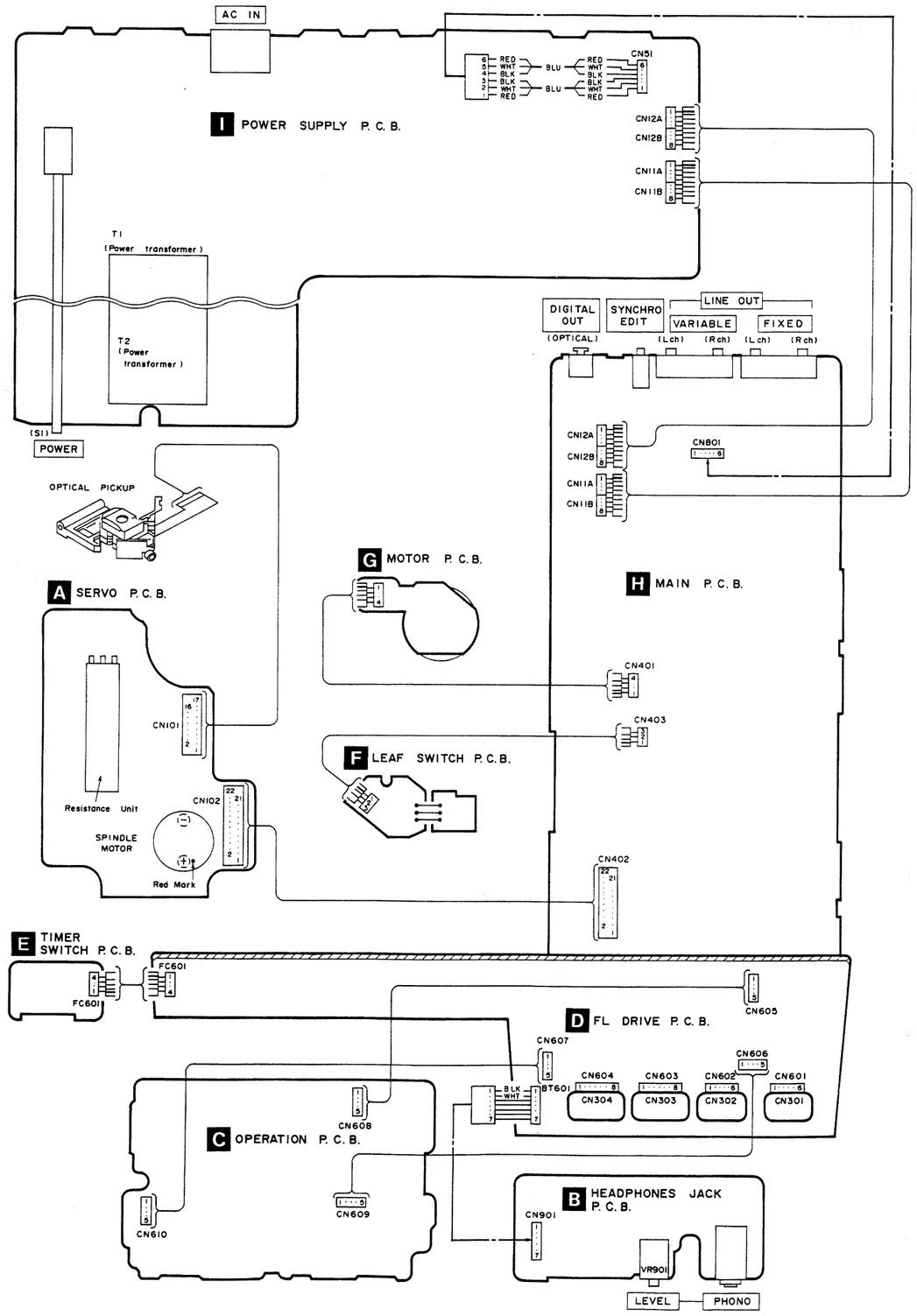
B HEADPHONES JACK P.C.B.



3. For[E, EB, EG, GN] areas.

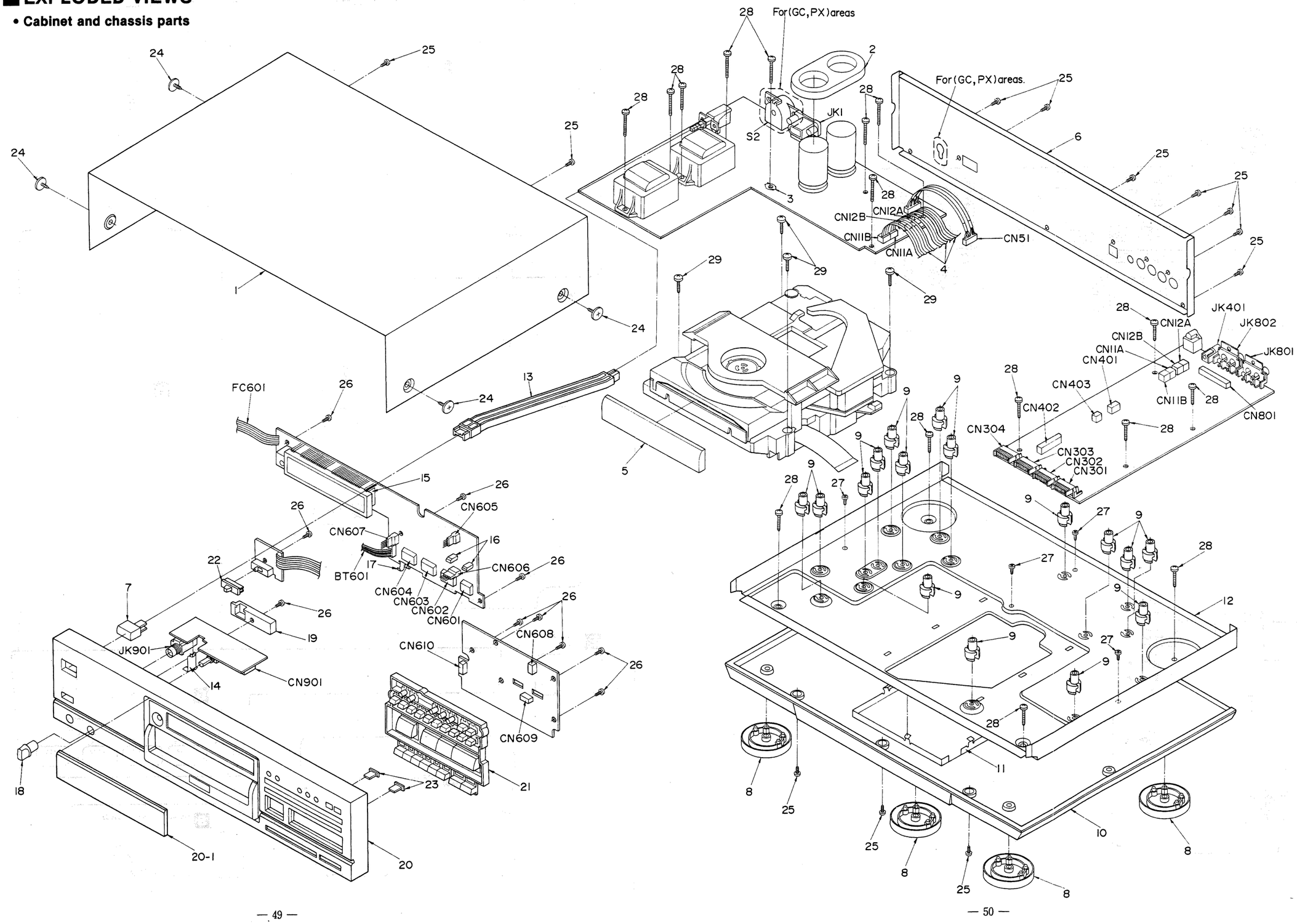


■ WIRING CONNECTION DIAGRAM



■ EXPLODED VIEWS

• Cabinet and chassis parts



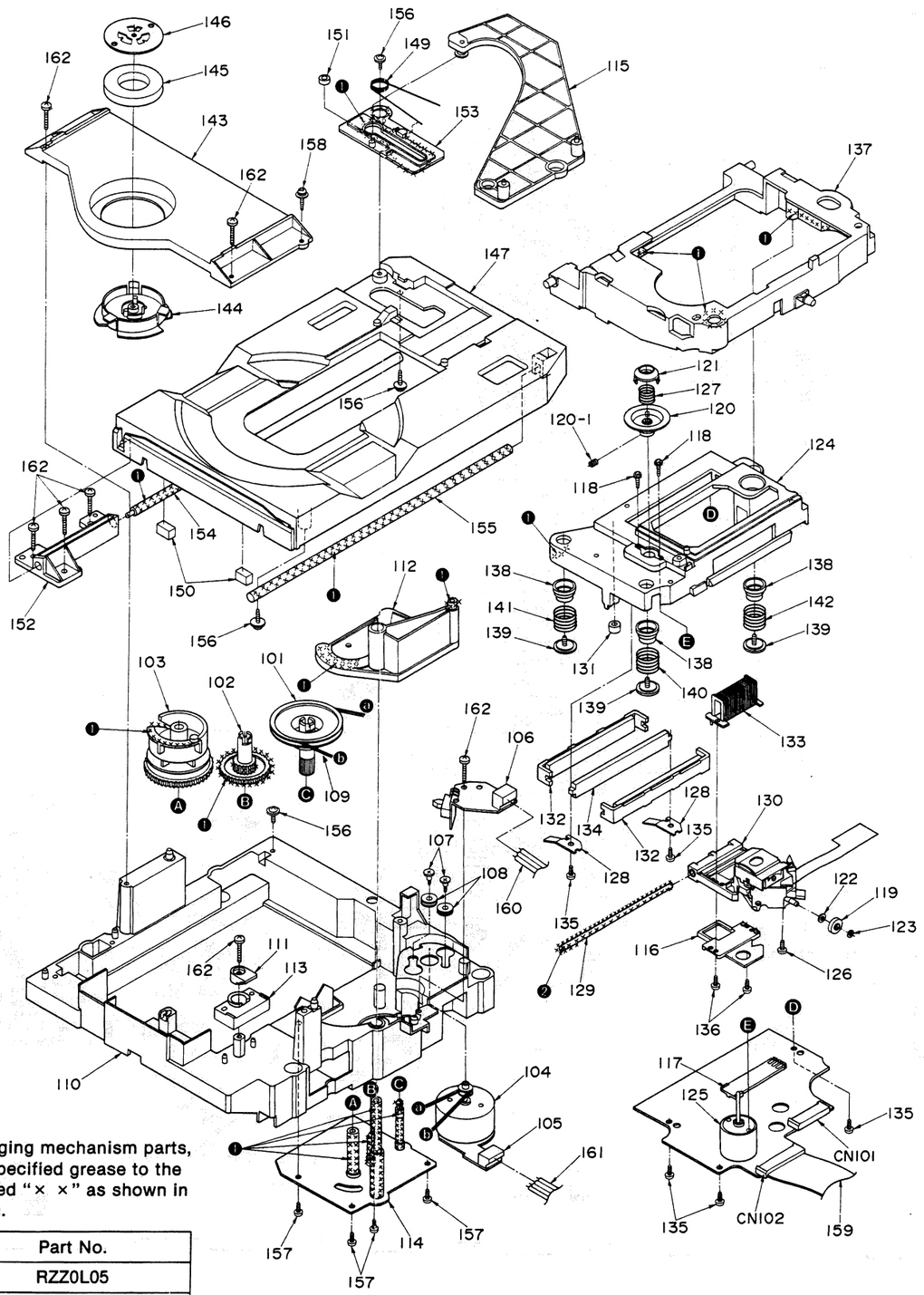
• Trave

Note: When changing m
apply the specifie
areas marked "×
the drawing.

Ref. No.	Pa
❶	RZ
❷	SZ

10 11 12 13

• Traverse deck parts



Note: When changing mechanism parts, apply the specified grease to the areas marked "× ×" as shown in the drawing.

Ref. No.	Part No.
❶	RZZ0L05
❷	SZZ0L31

■ REPLACEMENT PARTS LIST

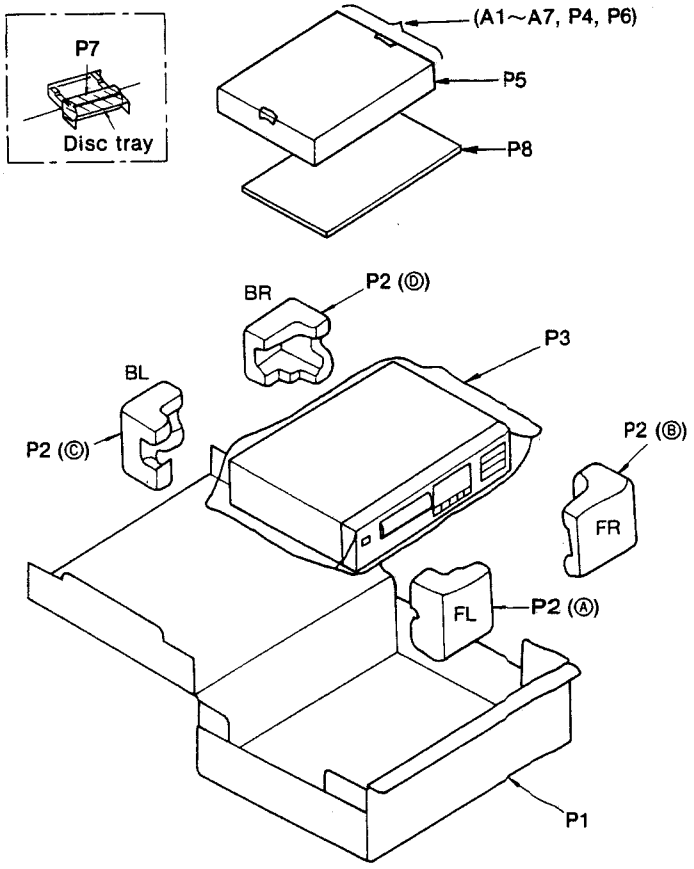
Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 3.
* ACHTUNG:
Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKKLPS700-K	CABINET	
2	RMF0050	SPONGE	
3	SNE1004-1	GND PLATE	
4	REZ0316	FLAT CABLE(8P)	
5	RGK0344A-1K	TRAY ORNAMENT	
6	RFKHLPS900E	REAR PANEL	(E)
6	RFKHLPS900EB	REAR PANEL	(EB, GN)
6	RGR0064G-B1	REAR PANEL	(EG)
6	RGR0064H-A1	REAR PANEL	(GC)
6	RFKHLPS900PX	REAR PANEL	(PX)
7	RGU0030	POWER BUTTON	
8	RKA0009-1	FOOT	
9	RKQ0089	P.C.B. SUPPORT	
10	RKU0030-K	BOTTOM BOARD	
11	RMA0470	SHIELD PLATE	
12	RMK0118C	CHASSIS	
13	RMM0048	POWER ROD	
14	RMC0063	HEADPHONES EARTH ANGLE	
15	RMN0056	FL HOLDER	
16	SHRD169	LED HOLDER	
17	SUSD144	EARTH ANGLE	
18	RGW0048	HEADPHONES VOLUME KNOB	
19	RMR0375-K	HEADPHONES HOLDER	
20	RFKGLPS900PP	FRONT PANEL ASS'Y	
20-1	RKW0135-R2	METER ORNAMENT PLATE	
21	RGU0511A-Y	OPERATION BUTTON	
22	SBD143	TIMER BUTTON	
23	SHRD133	INDICATOR	
24	SNE2129-1	SCREW	
25	XTBS3+8JFZ1	SCREW	
26	XTB3+8JFZ	SCREW	
27	XTB3+10G	SCREW	
28	XTB3+20JFZ	SCREW	
29	XTB3+8F	SCREW	
		TRAVERSE DECK	
101	RDG0154	PULLEY GEAR	
102	RDG0155	REDUCTION GEAR	
103	RDK0015-1	DRIVE CAM	
104	REM0026	MOTOR ASS'Y	
105	SJT30444-H	CONNECTOR(4P) (CN401)	
106	SJT30344-H	CONNECTOR(3P) (CN403)	
107	RHD26002	SCREW	

Ref. No.	Part No.	Part Name & Description	Remarks
108	RHG3032ZA	MOTOR CUSHION RUBBER	
109	RMG0121	BELT	
110	RMR0381-2	LOADING BASE	
111	RMR0384-3	SHAFT HOLDER(R)	
112	RMR0386-3	DRIVE PLATE	
113	RMR0411-2	SHAFT HOLDER PLATE	
114	RXA0093	GEAR BASE ASS'Y	
115	RXL0066	ROTATION LEVER	
116	SHRD176-E	BRUSH HOLDER	
117	SJED10	POTENTION METER HOLDER	
118	RMQ0048	SCREW	
119	RMR0463	ROLLER	
120	SD0D28-2E	TURNTABLE ASS'Y	
120-1	XXE26D5	SCREW	
121	SD0D29-2	RING	
122	SHWD33	WASHER	
123	SHWD34	WASHER	
124	SISD22-5	TRAVERSE BASE	
125	SJGDRF310T-2	SPINDLE MOTOR	
126	SNSD31	SCREW	
127	SRQA010N04	T.T. SPRING	
128	SUWD112-2	SHAFT HOLDER	
129	SUXD123-1	GUIDE SHAFT	
130	S0AD70A	OPTICAL PICKUP	⚠
131	SHGD148	STOPPER RUBBER	
132	RFKNLPC363P	YOKE(A)	
133	SORD46-E	COIL ASS'Y	
134	SOYD22-1	YOKE(B)	
135	XTB3+10G	SCREW	
136	SNSD39	SCREW	
137	RXQ0157	SUB BASE ASS'Y	
138	SHGD153-1	FLOATING RUBBER	
139	SNSD33	SCREW	
140	SUSD136-3	FLOATING SPRING A	
141	SUSD137-1	FLOATING SPRING B	
142	SUSD145-1	FLOATING SPRING C	
143	RMR0385-1	CLAMP PLATE	
144	SIRD51-1	CLAMPER	
145	SOMD4	MAGNET	
146	SOYD2	YOKE	
147	RFKNLPS700E	DISC TRAY ASS'Y	
149	RME0074-1	TRAY SPRING	
150	RMG0199	TRAY CUSHION RUBBER	
151	RMG0200	CUSHION RUBBER	
152	RMR0383-1	SHAFT HOLDER(L)	
153	RMR0412-3	SLIDE PLATE	
154	RMS0265-1	TRAY GUIDE SHAFT(L)	

Ref. No.	Part No.	Part Name & Description	Remarks
155	RMS0309-1	TRAY GUIDE SHAFT(R)	
156	XTWS3+10Q	SCREW	
157	XTB3+10JFZ	SCREW	
158	XYN3+F8	SCREW	
159	REZ0328	FPC(22P)	
160	REZ0338-1	FLAT CABLE(3P)	
161	REZ0341	FLAT CABLE(4P)	
162	XTB3+12JFZ	SCREW	
		PACKING MATERIAL	
P1	RPG0894	PACKING CASE	(E, EB, EG, GC, GN)
P1	RPG0893	PACKING CASE	(PX)
P2	RPN0370	PAD	
P3	XZB60X60A01	PROTECTION BAG(UNIT)	
P4	SPB1061	PROTECTION BAG(F. B.)	
P5	SPSD152	ACCESSORIES BOX	
P6	XZB26X17C03	PROTECTION BAG(CORD)	
P7	RPHD086	PROTECTION SHEET	
P8	RPQ0164	PAD	
		ACCESSORIES	
A1	RFKSLPS900E	INST. MANUAL ASS'Y	(E)
A1	RQT1079-B	INSTRUCTION MANUAL	(EB, GN)
A1	RQT1080-D	INSTRUCTION MANUAL	(EG)
A1	RQT1077-G	INSTRUCTION MANUAL	(GC)
A1	RQT1081-M	INSTRUCTION MANUAL	(PX)
A2	RQA0013	WARRANTY CARD	(E, EB, EG)
A2	SQX7186	WARRANTY CARD	(GN)
A2	SQX7071-1	WARRANTY CARD	(PX)
A3	RQCB0169	SERVICENTER LIST	(E, EB, EG, GC, GN)
A4	SFDAC05E03	AC POWER SUPPLY CORD	(E, EG) ⚠
A4	SJA193	AC POWER SUPPLY CORD	(EB) ⚠
A4	RJA0004	AC POWER SUPPLY CORD	(GC, PX) ⚠
A4	SJA173	AC POWER SUPPLY CORD	(GN) ⚠
A5	SJP2249-4	STEREO CONNECTION CABLE	
A6	RAK-SL512W	REMOTE CONTROL TRANSMITTER	
A6-1	RKKD020-K	BATTERY COVER	
A7	SJP9215	POWER PLUG ADAPTOR	(GC, PX) ⚠

■ PACKING



(P2: Ⓐ Ⓑ Ⓒ Ⓓ: Part No. RPN0370)

■ REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
* Warning: This product uses a laser diode. Refer to caution statements on page 3.
* ACHTUNG:
Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11, 12	M5278L05TA	IC, REGULATOR	
IC53	NJM4580D	IC, BUFFER AMP	
IC54	LM2940T5	IC, REGULATOR	
IC101	AN8800SCE2	IC, SERVO AMP	
IC102	MN6650	IC, DIGITAL SERVO PROCESSOR	
IC103	AN8377N	IC, COIL DRIVE	
IC104	TC7SU04FT85R	IC, BUFFER AMP(OSC)	
IC301	MN6626	IC, DIGITAL SIGNAL PROCESSOR	
IC303	T0TX174-A	IC, TRANSMISSION MODULE	
IC361	TCA0372DM2R2	IC, VOLUME MOTOR DRIVE	
IC401	MN1554PKK6	IC, SYSTEM CONTROL	
IC402	SVIBA4558F	IC, MOTOR DRIVE	
IC403	M51953BFPTA	IC, RESET SIGNAL GENERATOR	
IC601	MND1616PKP	IC, SYSTEM CONTROL&FL DRIVE	
IC602	RCD0003	IC, REMOTE CONTROL RECEIVER	
IC603	X24LC01P	IC, E. E. PROM	
IC801	MN6476	IC, DIGITAL FILTER&D/A CONV.	
IC803-808	NJM4580ED-T1	IC, OP AMP.	
IC891, 892	M5219FP	IC, BUFFER AMP.	
IC901	M5218L	IC, HEADPHONES AMP.	
		TRANSISTOR(S)	
Q11	2SB1238QSTV6	TRANSISTOR	
Q12	2SC3311A-Q	TRANSISTOR	
Q13	2SA1309A-R	TRANSISTOR	
Q51-53	2SD2037DEFTA	TRANSISTOR	
Q54	2SB1357DEFTA	TRANSISTOR	
Q55	2SD1862QRTV6	TRANSISTOR	
Q56	2SB1240-P	TRANSISTOR	
Q57	2SB1357DEFTA	TRANSISTOR	
Q59	2SD1862QRTV6	TRANSISTOR	
Q60	2SB1240-P	TRANSISTOR	
Q101	2SA1547QTV2	TRANSISTOR	
Q351	DTA124ESTP	TRANSISTOR	
Q352	2SD1862QRTV6	TRANSISTOR	
Q353	2SB1240-P	TRANSISTOR	
Q401	2SD1862QRTV6	TRANSISTOR	
Q402	2SB1240-P	TRANSISTOR	
Q407	DTC124EST	TRANSISTOR	
Q601, 602	DTC114ESTP	TRANSISTOR	
Q603	DTC124EST	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q801, 802	2SC3311A-Q	TRANSISTOR	
Q803, 804	2SD1450RTA	TRANSISTOR	
Q851	DTA114ESTP	TRANSISTOR	
Q852	DTA124ESTP	TRANSISTOR	
Q853, 854	DTC124EST	TRANSISTOR	
Q855	DTA124ESTP	TRANSISTOR	
Q871	DTA124ESTP	TRANSISTOR	
Q873, 874	2SC3311A-Q	TRANSISTOR	
Q891, 892	2SD1450RTA	TRANSISTOR	
Q901, 902	2SC3311A-Q	TRANSISTOR	
Q903, 904	2SD1450RTA	TRANSISTOR	
Q951, 952	2SC3311A-Q	TRANSISTOR	
		DIODE(S)	
D11-14	SVD1SR35200A	DIODE	⚠
D15	MA4330MTA	DIODE	
D16	MA4091-M	DIODE	
D17, 18	MA4120	DIODE	
D51	SVDRDF02M	DIODE	
D52-55	SVD1SR35200A	DIODE	⚠
D57, 58	MA4082MTA	DIODE	
D59, 60	MA4091-M	DIODE	
D61, 62	SVD1SR35200A	DIODE	⚠
D63, 64	MA4091-M	DIODE	
D301	1SS254TA	DIODE	
D361	MA723TA	DIODE	
D601-607	1SS254TA	DIODE	
D609, 610	1SS254TA	DIODE	
D611	SVGDPG7851Y	DIODE	
D612	SVGDAY7851	DIODE	
D803, 804	1SS254TA	DIODE	
D851	MA723TA	DIODE	
D852-855	1SS254TA	DIODE	
D871-874	1SS254TA	DIODE	
D891, 892	1SS254TA	DIODE	
D951, 952	1SS254TA	DIODE	
		VARIABLE RESISTOR(S)	
VR51	EUWMJU048B15	V. R, VOLUME UP/DOWN	
VR101	EVND3AA00B14	V. R, BEST EYE ADJ.	
VR901	EVJCB0F02A15	V. R, HEADPHONES VOLUME	
		COMPONENT COMBINATION(S)	

Ref. No.	Part No.	Part Name & Description	Remarks
Z301, 302	EXCELDR35V	COMBINATION PART	
Z601	EXCELSA35	COMBINATION PART	
Z803	EXCELDR35V	COMBINATION PART	
		COIL (S)	
L1, 2	SLQX400-D	COIL	⚠
L101	RLB0003	COIL	
L102	RELJHC6R8KTD	COIL	
L301	RLQZP2R2KT-Y	COIL	
L303	RLQZP5R6KT-Y	COIL	
L401, 402	RLQZP3R3KT-Y	COIL	
L801, 802	RLQZP3R3KT-Y	COIL	
L803, 804	RLQZP1R2KT-Y	COIL	
L891, 892	RLQZP3R3KT-Y	COIL	
L901-903	RLQZP3R3KT-Y	COIL	
		TRANSFORMER (S)	
T1, 2	RTP1K4B012	POWER TRANSFORMER	(E, EB, EG, GN) ⚠
T1, 2	RTP1K4E020	POWER TRANSFORMER	(GC, PX) ⚠
		OSCILLATOR (S)	
X101	RSXZ16M9M01T	OSCILLATOR (16.9344MHz)	
X801	SVQ49U338S	OSCILLATOR (33.8688MHz)	
		DISPLAY TUBE	
FL601	RSL0068-F	DISPLAY TUBE	
		SWITCH (ES)	
S1	ESB8249V	SW, POWER	⚠
S2	SSR187-1	SW, VOLTAGE ADJ.	(GC, PX) ⚠
S601	EVQ21405R	SW, 1	
S602	EVQ21405R	SW, 2	
S603	EVQ21405R	SW, 3	
S604	EVQ21405R	SW, 4	
S605	EVQ21405R	SW, 5	
S606	EVQ21405R	SW, 6	
S607	EVQ21405R	SW, 7	
S608	EVQ21405R	SW, 8	
S609	EVQ21405R	SW, 9	
S610	EVQ21405R	SW, 10	
S611	EVQ21405R	SW, 11	
S612	EVQ21405R	SW, 12	
S613	EVQ21405R	SW, 13	
S614	EVQ21405R	SW, 14	
S615	EVQ21405R	SW, 15	
S616	EVQ21405R	SW, 16	

Ref. No.	Part No.	Part Name & Description	Remarks
S617	EVQ21405R	SW, 17	
S618	EVQ21405R	SW, 18	
S619	EVQ21405R	SW, 19	
S620	EVQ21405R	SW, 20	
S621	EVQ21405R	SW, 0	
S622	EVQ21405R	SW, >20	
S623	EVQ21405R	SW, PLAY	
S624	EVQ21405R	SW, PAUSE	
S625	EVQ21405R	SW, STOP	
S626	EVQ21405R	SW, OPEN/CLOSE	
S627	EVQ21405R	SW, PROGRAM	
S628	EVQ21405R	SW, RECALL	
S629	EVQ21405R	SW, CLEAR	
S630	EVQ21405R	SW, TIME MODE	
S631	EVQ21405R	SW, F1	
S632	EVQ21405R	SW, F2	
S633	EVQ21405R	SW, F3	
S634	EVQ21405R	SW, F4	
S635	EVQ21405R	SW, DIRECT/F5	
S636	EVQ21405R	SW, FUNCTION MANAGER	
S637	EVQ21405R	SW, R. SEARCH	
S638	EVQ21405R	SW, F. SEARCH	
S639	EVQ21405R	SW, DISPLAY MODE	
S640	RSS3A18YA-H	SW, TIMER	
S751	RSH2B001	SW, OPEN/CLOSE DET.	
		CONNECTOR (S) & SOCKET (S)	
CN51	REX0351	CONNECTOR (6P)	
CN101	SJSD1727-1	CONNECTOR (17P)	
CN102	SJSD2227-1	CONNECTOR (22P)	
CN301, 302	RJU003K006M1	SOCKET (6P)	
CN303, 304	RJU003K008M1	SOCKET (8P)	
CN401	RJS1A1704	SOCKET (4P)	
CN402	SJSD2221	CONNECTOR (22P)	
CN403	RJS1A1703	CONNECTOR (3P)	
CN601, 602	RJT003K006M1	CONNECTOR (6P)	
CN603, 604	RJT003K008M1	CONNECTOR (8P)	
CN605-607	SJT30549BB1	CONNECTOR (5P)	
CN608-610	SJS50581BB	SOCKET (5P)	
CN801	RJT029W06VT	CONNECTOR (6P)	
CN901	RJP7G17ZA	CONNECTOR (7P)	
CN11A	RJS1A1704	SOCKET (4P) (MAIN)	
CN11A	RJS1A1704	SOCKET (4P) (POWER)	
CN12A	RJS1A1704	SOCKET (4P) (MAIN)	
CN12A	RJS1A1704	SOCKET (4P) (POWER)	
CN11B	RJS1A1704	SOCKET (4P) (MAIN)	
CN11B	RJS1A1704	SOCKET (4P) (POWER)	
CN12B	RJS1A1704	SOCKET (4P) (MAIN)	
CN12B	RJS1A1704	SOCKET (4P) (POWER)	
		FLAT CABLE (S)	

Ref. No.	Part No.	Part Name & Description	Remarks
FC601	REZ0331	FLAT CABLE(4P)	
BT601	REX0144	CONNECTOR ASS'Y(7P)	
		JACK(S)	
JK1	SJS9236	AC INLET	(E, EB, EG, GC, PX) ⚠
JK1	SJSD16	AC INLET	(GN) ⚠
JK401	RJJ33T01	SYNCHRO EDIT	
JK801	RJH3201A	LINE OUT(FIXED)	
JK802	RJH3201A	LINE OUT(VARIABLE)	
JK901	QJA0455ZC-A	HEADPHONES	
		MAGNET RESISTOR ELEMENTS	
RA1	EWS7M0A00Q53	RESISTANCE UNIT	

RESISTORS & CAPACITORS

Notes : * Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11	ERDS2TJ103	1/4W 10K
R12	ERDS2TJ6R8	1/4W 6.8
R13, 14	ERDS2TJ471	1/4W 470
R51, 52	ERDS2TJ271	1/4W 270
R53	ERDS2TJ471	1/4W 470
R54-59	ERDS2TJ1R0	1/4W 1.0
R60-63	ERDS2TJ221	1/4W 220
R65-68	ERQ16NKWR15E	1W 0.15
R69-72	ERDS2TJ1R0	1/4W 1.0
R73-76	ERDS2TJ221	1/4W 220
R77, 78	ERDS2TJ104	1/4W 100K
R101	ERJ6GEYJ120V	1/10W 12
R102	ERJ6GEYJ122V	1/10W 1.2K
R103	ERJ6GEYJ823	1/10W 82K
R104	ERJ6GEYJ471V	1/10W 470
R105	ERJ6GEYJ104V	1/10W 100K
R106	ERJ6GEYJ223V	1/10W 22K
R107	ERJ6GEYJ153V	1/10W 15K
R108	ERJ6GEYJ223V	1/10W 22K
R109	ERJ6GEYJ122V	1/10W 1.2K
R110, 111	ERJ6GEYJ102V	1/10W 1K
R112	ERJ6GEYJ333V	1/10W 33K
R113	ERJ6GEYJ103V	1/10W 10K
R114	ERJ6GEYJ473V	1/10W 47K
R115	ERJ6GEYJ471V	1/10W 470

Ref. No.	Part No.	Values & Remarks
R116	ERJ6GEYJ220	1/10W 22
R117	ERJ6GEYJ103V	1/10W 10K
R118-120	ERJ6GEYJ102V	1/10W 1K
R121	ERJ6GEYJ562V	1/10W 5.6K
R301-306	ERDS2TJ472	1/4W 4.7K
R307	ERDS2TJ104	1/4W 100K
R309	ERDS2TJ472	1/4W 4.7K
R310	ERDS2TJ182	1/4W 1.8K
R311	ERDS2TJ272T	1/4W 2.7K
R312	ERDS2TJ222	1/4W 2.2K
R314	ERDS2TJ822	1/4W 8.2K
R315	ERDS2TJ823T	1/4W 82K
R316	ERDS2TJ105T	1/4W 1M
R317	ERDS2TJ473	1/4W 47K
R319	ERDS2TJ221	1/4W 220
R351	ERDS2TJ333	1/4W 33K
R352	ERDS2TJ334	1/4W 330K
R353	ERDS2TJ123	1/4W 12K
R354	ERDS2TJ334	1/4W 330K
R355, 356	ERDS2TJ333	1/4W 33K
R357	ERDS2TJ8R2T	1/4W 8.2
R358	ERDS2TJ101	1/4W 100
R359	ERDS2TJ473	1/4W 47K
R361, 362	ERDS2TJ472	1/4W 4.7K
R363-366	ERDS2TJ473	1/4W 47K
R401-408	ERDS2TJ221	1/4W 220
R409-416	ERDS2TJ472	1/4W 4.7K
R419, 420	ERDS2TJ102	1/4W 1K

Ref. No.	Part No.	Values & Remarks
R421, 422	ERDS2TJ913	1/4W 91K
R423, 424	ERDS2TJ104	1/4W 100K
R425	ERDS2TJ101	1/4W 100
R427	ERDS2TJ472	1/4W 4.7K
R428	ERDS2TJ273	1/4W 27K
R429, 430	ERDS2TJ102	1/4W 1K
R431	ERDS2TJ472	1/4W 4.7K
R432	ERDS2TJ100	1/4W 10
R601-609	ERDS2TJ472	1/4W 4.7K
R610, 611	ERDS2EJ121	1/4W 120
R801-808	ERDAS3G183T	1/4W 18K
R809-816	ERDAS3G273T	1/4W 27K
R817-824	ERDAS3J473T	1/4W 47K
R825-828	ERDAS3G683T	1/4W 68K
R829-832	ERDAS3G183T	1/4W 18K
R833, 834	ERDAS3G103T	1/4W 10K
R835, 836	ERDS2TJ101	1/4W 100
R837, 838	ERDAS3G822T	1/4W 8.2K
R839, 840	ERDAS3G182	1/4W 1.8K
R841, 842	ERDAS3J105T	1/4W 1M
R843, 844	ERDAS3G103T	1/4W 10K
R845, 846	ERDAS3G153T	1/4W 15K
R847, 848	ERDAS3G183T	1/4W 18K
R849, 850	ERDAS3J100T	1/4W 10
R851, 852	ERDAS3J330T	1/4W 33
R853, 854	ERDAS3J332T	1/4W 3.3K
R855, 856	ERDAS3J102T	1/4W 1K
R857-860	ERDAS3J471T	1/4W 470

Ref. No.	Part No.	Values & Remarks
R861, 862	ERDAS3J124T	1/4W 120K
R865-868	ERDS2TJ102	1/4W 1K
R869	ERDS2TJ472	1/4W 4.7K
R870, 871	ERDAS3G333	1/4W 33K
R872	ERDS2TJ472	1/4W 4.7K
R873, 874	ERDS2TJ102	1/4W 1K
R875, 876	ERDS2TJ563	1/4W 56K
R877, 878	ERDS2EJ820	1/4W 82
R879	ERDS2TJ471	1/4W 470
R881, 882	ERDS2TJ102	1/4W 1K
R883	ERDS2TJ472	1/4W 4.7K
R884	ERDS2TJ333	1/4W 33K
R885	ERDS2TJ474	1/4W 470K
R886	ERDS2TJ102	1/4W 1K
R889, 890	ERDAS3J101T	1/4W 100
R891, 892	ERDAS3J471T	1/4W 470
R893, 894	ERDS2TJ102	1/4W 1K
R895, 896	ERDAS3J471T	1/4W 470
R897, 898	ERDAS3J124T	1/4W 120K
R901, 902	ERDS2TJ153	1/4W 15K
R903-906	ERDS2TJ183T	1/4W 18K
R907, 908	ERDS2TJ224T	1/4W 220K
R909, 910	ERDS2TJ473	1/4W 47K
R911, 912	ERDS2TJ101	1/4W 100
R913, 914	ERDS2TJ222	1/4W 2.2K
R915, 916	ERDS2TJ472	1/4W 4.7K
R951, 952	ERDS2TJ563	1/4W 56K
R953, 954	ERDS2EJ820	1/4W 82
		CHIP JUMPER(S)
RJ101	ERJ6GEY0R00V	CHIP JUMPER
TJ101, 102	ERD25V0R00T	CHIP JUMPER
		CAPACITORS
C1	ECKWKC103PF2	400V 0.01U ⚠
C11, 12	ECA1EM471B	25V 470U
C13, 14	ECEA1HU101	50V 100U
C15	ECBT1H102KB5	50V 1000P
C16	ECEA1AU221	10V 220U
C17	ECEA0JU471	6.3V 470U
C18	ECEA1AU331	10V 330U
C19	ECA1EPXS221B	25V 220U
C20	ECA1APXS101B	10V 100U
C21	ECFR1E104ZF5	25V 0.1U
C22-24	ECBT1C103NS5	16V 0.01U
C51, 52	ECQB1H103JZ	50V 0.01U
C53, 54	ECESX1J332BA	63V 3300U
C55, 56	ECA1APXS101B	10V 100U
C57, 58	ECFR1E103KB	25V 0.01U
C59	ECEA1EU332E	25V 3300U
C60	ECEA1EU222	25V 2200U
C61, 62	ECBT1C103NS5	16V 0.01U

Ref. No.	Part No.	Values & Remarks
C63	ECA1CM102B	16V 1000U
C64	ECEA0JU471	6.3V 470U
C65, 66	ECA1EM471B	25V 470U
C67, 68	ECBT1C103NS5	16V 0.01U
C69, 70	ECEA1AKA101B	10V 100U
C71, 72	ECFR1E104ZF5	25V 0.1U
C73, 74	ECA1EPXS221B	25V 220U
C75, 76	ECBT1C103NS5	16V 0.01U
C77	ECEA1AKN100B	10V 10U
C78-80	ECBT1C103NS5	16V 0.01U
C81	ECEA1EU101	25V 100U
C82	ECEA1AKA101B	10V 100U
C83-86	ECEA1CBZ330B	16V 33U
C101	ECEA0JKA220	6.3V 22U
C102	ECEA1HKS010	50V 1U
C103	ECA0JKF101I	6.3V 100U
C105	ECEA0JKS470	6.3V 47U
C110	ECEA1CSN4R7I	16V 4.7U
C111	ECUV1C393KBN	16V 0.039U
C112	ECUV1H392KBN	50V 3900P
C113, 114	ECUV1C224KBM	16V 0.22U
C115	ECUV1H331KBN	50V 330P
C116, 117	ECEA0JKA470I	6.3V 47U
C118, 119	ECUV1C104ZFN	16V 0.1U
C120	ECUV1H122KBN	50V 1200P
C121	ECUV1C105ZFM	16V 1U
C122	ECUV1E103KBN	25V 0.01U
C123	ECUV1C104ZFN	16V 0.1U
C124	ECA0JKF101I	6.3V 100U
C125	ECEA1CKS470I	16V 47U
C126	ECEA0JKS470	6.3V 47U
C127, 128	ECUV1E153KBN	25V 0.015U
C129	ECEA1HSN010I	50V 1U
C130	ECEA1CSN100I	16V 10U
C131	ECEA1HKS010	50V 1U
C132	ECUV1H681KBN	50V 680P
C133	ECEA0JKS470	6.3V 47U
C134	ECUV1H222KBN	50V 2200P
C135	ECEA1EKS330I	25V 33U
C136	ECUV1C104ZFN	16V 0.1U
C138	ECUV1C224KBM	16V 0.22U
C139	ECUV1E103KBN	25V 0.01U
C140, 141	ECUV1H270KCN	50V 27P
C142	ECUV1H271KN	50V 270P
C301	ECFR1E104ZF5	25V 0.1U
C302	ECBT1C103NS5	16V 0.01U
C303	ECBT1H470J5	50V 47P
C304	ECFR1E104ZF5	25V 0.1U
C305	ECEA0JU101B	6.3V 100U
C306	ECEA0JU471	6.3V 470U
C307, 308	ECBT1H104ZF5	50V 0.1U
C309	ECBT1C103NS5	16V 0.01U
C310, 311	ECFR1E104ZF5	25V 0.1U
C312	ECBT1H330J5	50V 33P

Ref. No.	Part No.	Values & Remarks
C313	ECFR1E104ZF5	25V 0.1U
C314	ECEA0JKA470B	6.3V 47U
C315	ECEA0JU101B	6.3V 100U
C316	ECFR1E104ZF5	25V 0.1U
C317	ECQV1H474JZ3	50V 0.47U
C318	ECQV1H823JZ	50V 0.082U
C319	ECBT1H102KB5	50V 1000P
C320	ECBT1C103NS5	16V 0.01U
C323	ECEA0JU471	6.3V 470U
C324	ECBT1C103NS5	16V 0.01U
C351-353	ECBT1H102KB5	50V 1000P
C361, 362	ECBT1C103NS5	16V 0.01U
C401	ECFR1E104ZF5	25V 0.1U
C402	ECEA0JKA470B	6.3V 47U
C407	ECEA1HKR33	50V 0.33U
C408	ECFR1E104ZF5	25V 0.1U
C409-411	ECBT1H102KB5	50V 1000P
C412, 413	ECBT1C103NS5	16V 0.01U
C414	ECBT1H470J5	50V 47P
C601	ECBT1C103NS5	16V 0.01U
C602	ECEA1CKS100L	16V 10U
C603, 604	ECFR1E104ZF5	25V 0.1U
C605	ECEA1CKS100L	16V 10U
C751	ECBT1E223ZF	25V 0.022U
C801-804	ECBT1H221KB5	50V 220P
C809, 810	ECBT1H101KB5	50V 100P
C811, 812	ECEA1CBZ330B	16V 33U
C813, 814	ECHR1H822GZ3	50V 8200P
C815, 816	ECHR1H331GZ3	50V 330P
C817, 818	ECHR1H102GZ3	50V 1000P
C819, 820	ECHR1H121GZ3	50V 120P
C821, 822	ECEA1CBZ330B	16V 33U
C823, 824	ECHR1H102GZ3	50V 1000P
C825, 826	ECQV1H105JZ3	50V 1U
C827, 828	ECA0JPXS471B	6.3V 470U
C829, 830	ECA1APXS101B	10V 100U
C831, 832	ECEA1CBZ330B	16V 33U
C835, 836	ECBT1H3R3K5	50V 3.3P
C837	ECFR1E104KR	25V 0.1U
C841-844	ECBT1H221KB5	50V 220P
C851	ECEA0JU471	6.3V 470U
C852	ECEA1CN100SB	16V 10U
C853-860	ECBT1H680J5	50V 68P
C861, 862	ECBA1H681KB5	50V 680P
C863	ECBT1C103NS5	16V 0.01U
C864	ECEA0JU101B	6.3V 100U
C871	ECEA0JK220B	6.3V 22U
C891, 892	ECEA1CBZ330B	16V 33U
C893, 894	ECHR1H102GZ3	50V 1000P
C901, 902	ECEA1AKN100B	10V 10U
C903, 904	ECEA1AN470S	10V 47U
C905-910	ECBT1C103NS5	16V 0.01U
C951, 952	ECBA1H681KB5	50V 680P
C954	ECBT1C103NS5	16V 0.01U

Printed in Japan
H91051100N H/YU/KK

ORDER NO. AD9109204S0
A6

Service Manual

Supplement

COMPACT disc DIGITAL AUDIO

DIGITAL

MASH* multi-stage noise shaping

Compact Disc Player

SL-PS900

Color

(K) ... Black Type

Area

Country Code	Area	Color
(PP)	U.S.A./Canada.	(K)
(E)	Continental Europe.	
(EB)	Great Britain.	
(EG)	F.R. Germany & Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	
(PX)	Far East PX.	

※ • Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
• MASH is a trademark of NTT.

Please file and use this supplement manual together with the service manual for Model No. SL-PS900, Order No. AD9105129C1 (PP) and 9105113C8 (E, EB, EG, GC, GN, PX).

Note:
This supplement has been issued to inform you that the FL drive and main P.C.B. have been changed.

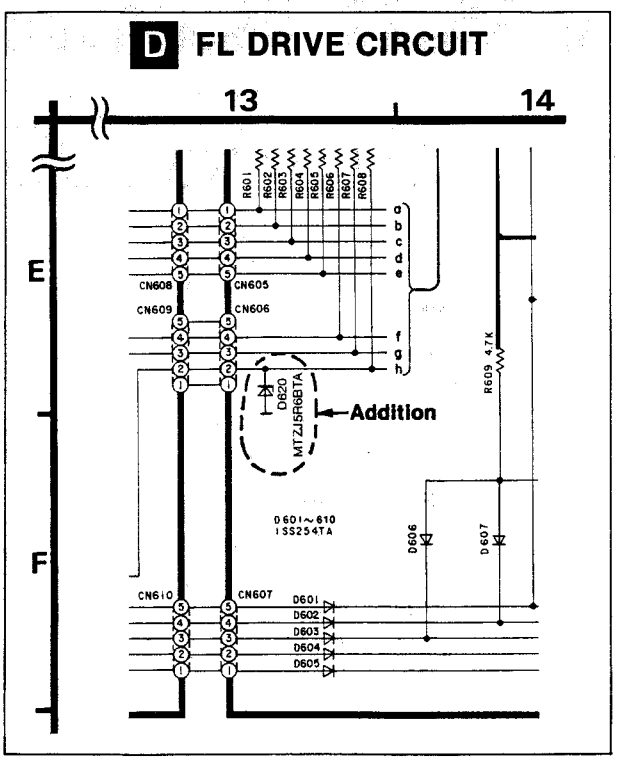
CHANGES

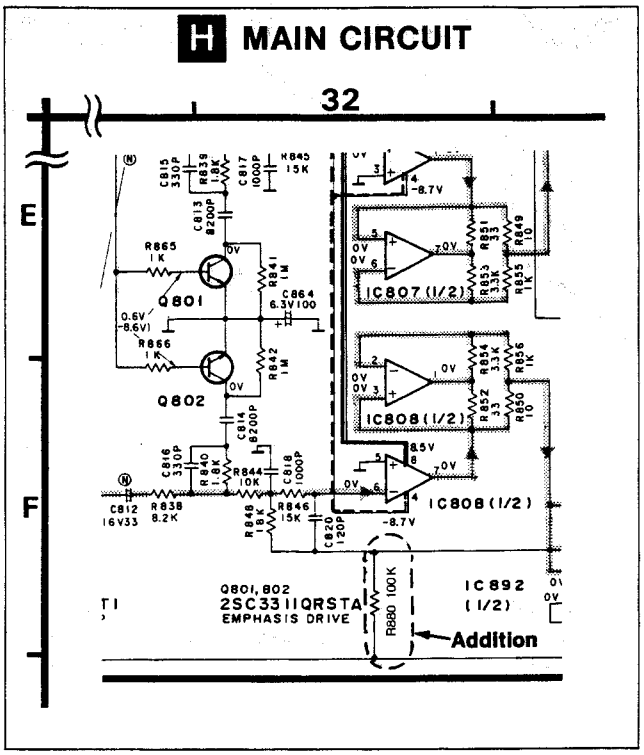
■REPLACEMENT PARTS LIST

Ref. No.	Change of Part No. ORIGINAL	Change of Part No. NEW	Part Name & Description	Remarks
INTEGRATED CIRCUIT(S)				
IC53	NJM4580D	**NJM4580DD**	IC, REGULATOR	
DIODE(S)				
D620	—	**MTZJ5R6BTA**	DIODE	Addition
RESISTOR(S)				
R880	—	**ERDS2TJ104**	RESISTOR, 1/4W 100KΩ	Addition
R911, 912	ERDS2TJ101	**ERDS2EJ121**	RESISTOR, 1/4W 120Ω	
CABINET AND CHASSIS				
30	—	**RMC0145**	TRANSFORMER SHIELD PLATE	Addition
31	—	**RMG0252-K**	RUBBER CAP	Addition
TRAVERSE DECK				
158	XYN3+F8	**RHD30017-1**	SCREW	

Technics

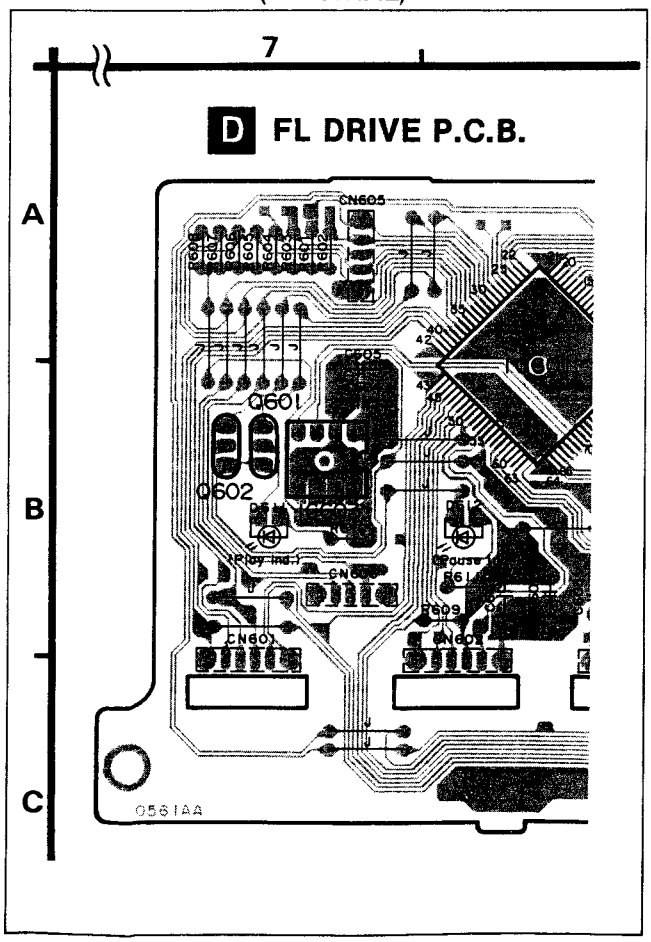
■ SCHEMATIC DIAGRAM (See pages 35, 39)





■ PRINTED CIRCUIT BOARDS (See page 42)

(ORIGINAL)



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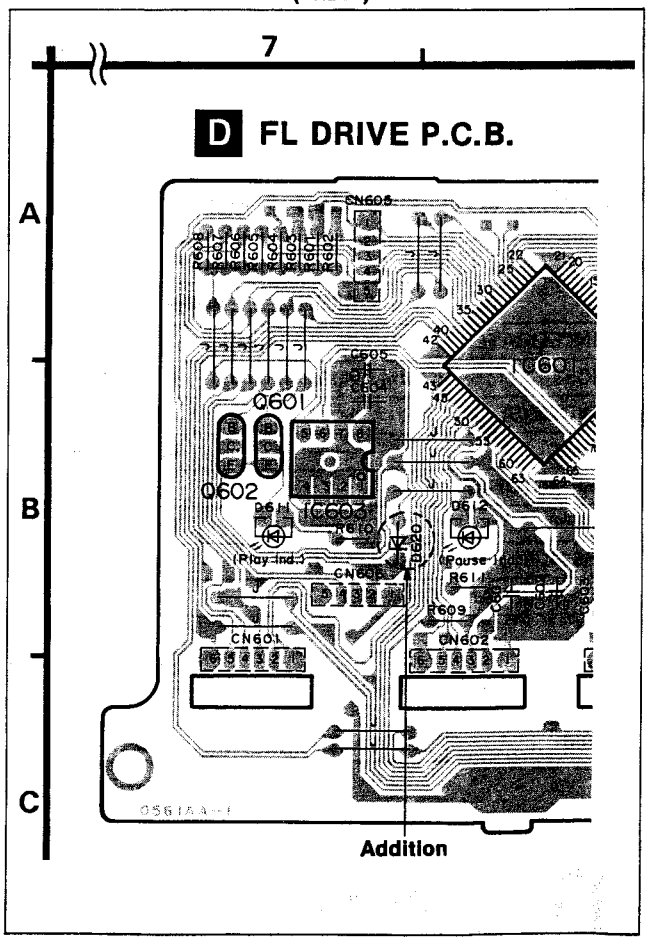

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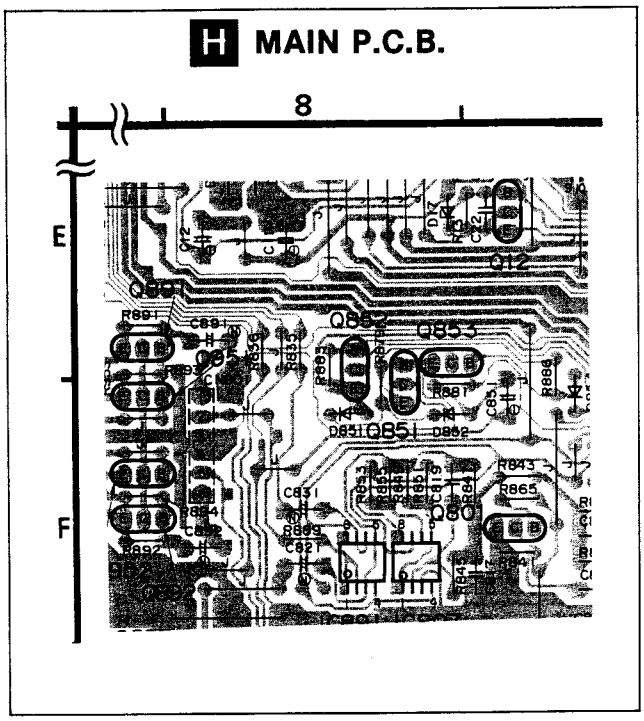

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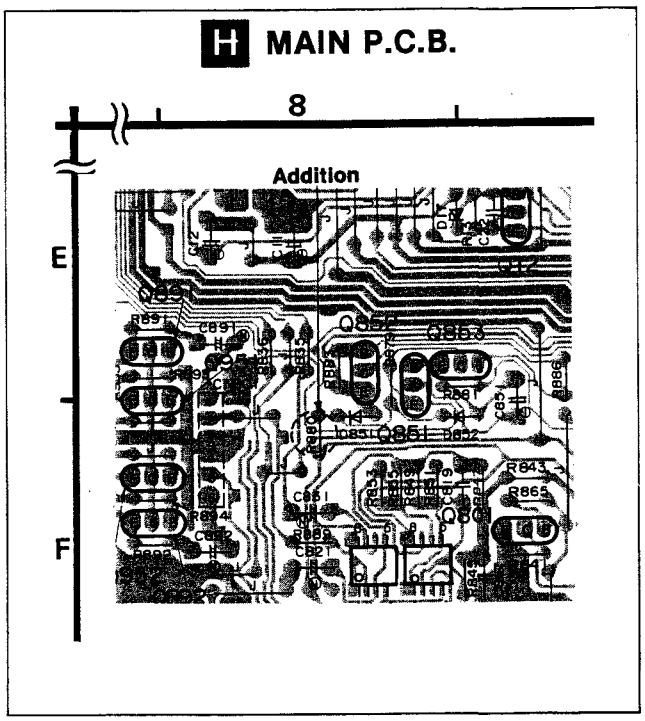
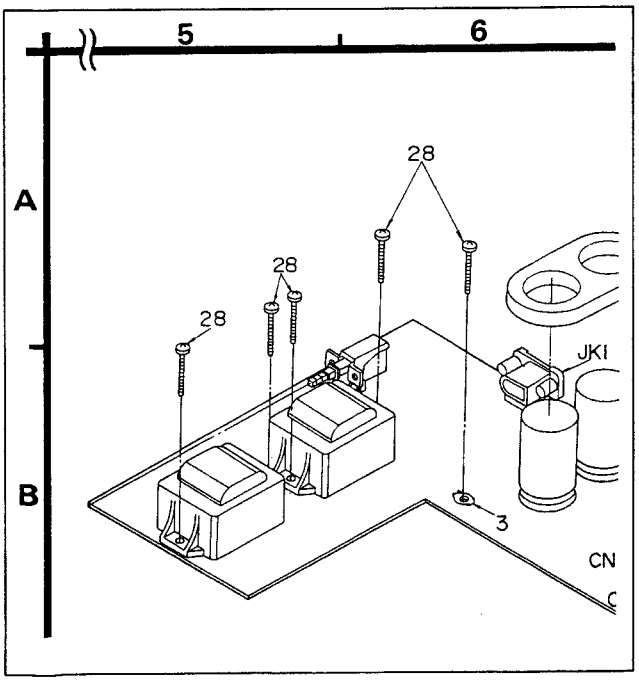


■ EXPLODED VIEWS (See pages 48, 49)

- **Cabinet and chassis parts**

(ORIGINAL)



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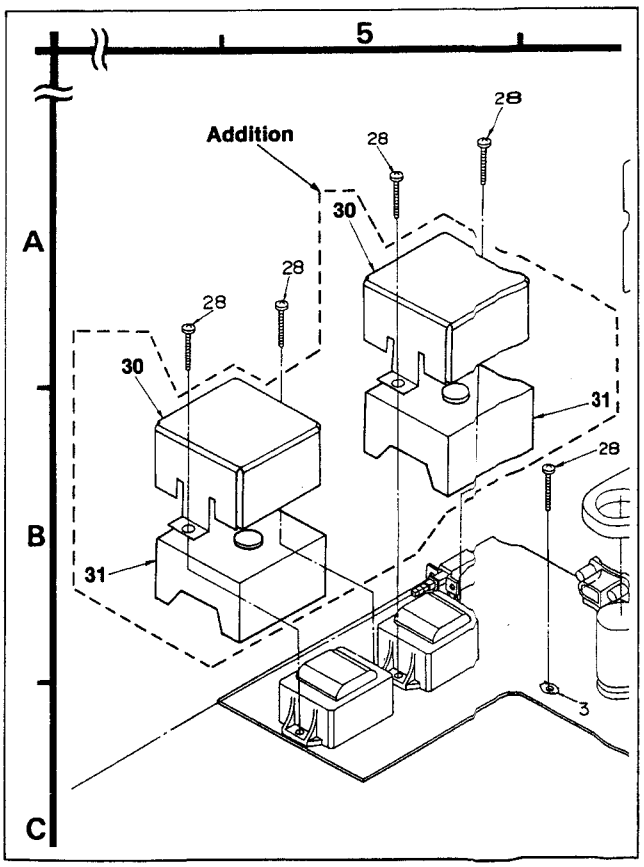

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